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Final
BASEWIDE ENVIRONMENTAL BASELINE SURVEY, REVISION 01
HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
VOLUME 1 OF 2

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ABBREVIATIONS AND ACRONYMS

AAA	Triple A Machine Shop
AC	Alternating current
ACM	Asbestos-containing material
AEA	Atomic Energy Act of 1954
AEC	U.S. Atomic Energy Commission
AEMC	American Environmental Management Corporation
AFA	Air Force Army Construction, Inc.
amps	Amperes
AOC	Area of concern
ARAR	Applicable or relevant and appropriate requirements
ASR	Alternative selection report
AST	Aboveground storage tank
Astoria Metals	Astoria Metals Corporation
ATSDR	Agency for Toxic Substances and Disease Registry
B&A	B&A Bodyworks and Towing
BAAQMD	Bay Area Air Quality Management District
BCDC	Bay Conservation and Development Commission
BCP	BRAC Cleanup Plan
BEC	BRAC Environmental Coordinator
BER	Baseline environmental report
bgs	Below ground surface
BRAC	Base Realignment and Closure
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CAC	Citizens Advisory Committee
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CAP	Corrective action plan
CC	Constant current
CCR	California Code of Regulations
CCSFPD	City and County of San Francisco Planning Department
City and County of San Francisco Department of Public Health (CCSFDPH)	
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act of 1992
CINC PAC FLEET	Pacific Fleet
cf	Cubic feet
CFR	Code of Federal Regulations
cm/sec	centimeters per second

ABBREVIATIONS AND ACRONYMS (Continued)

CNEL	Community Noise Equivalent Levels
CNO	Chief of Naval Operations
CNPS	California Native Plant Society
COPC	Chemical of potential concern
CPO	Chief Petty Officer
(d)	Demolished building
dB	Decibel
DDT	Dichlorodiphenyltrichloroethane
DEA	U.S. Drug Enforcement Agency
DHS	California Department of Health Services
DNAPL	Dense nonaqueous-phase liquid
DoD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DPW	District Public Works Office
DTSC	California Department of Toxics Substances Control
EBS	Environmental baseline survey
ECC	Environmental Chemical Corporation
ECP	Environmental condition of property
EFA West	Engineering Field Activity West
ELCR	Excess lifetime cancer risk
EMCON	Emcon Associates
EPA	U.S. Environmental Protection Agency
ERA	Ecological risk assessment
Ermico	Ermico Enterprises
ESA	Environmental Science Associates
F	Friable
FFA	Federal facility agreement
FOSL	Finding of suitability to lease
FOST	Finding of suitability to transfer
FS	Feasibility study
ft^2	Square feet
ft^3	Cubic feet
FUDS	Formerly used defense site
gal.	Gallon
GIS	Geographical information system
gpd	Gallons per day
gpm	Gallons per minute

ABBREVIATIONS AND ACRONYMS (Continued)

HBL	Health-based levels
HDPP	High-density polypropylene
HEE	Heilshorn Environmental Engineering
HHRA	Human health risk assessment
HLA	Harding Lawson Associates
HI	Hazard index
HPA	Hunters Point Annex
HPAL	Hunters Point ambient levels
HPS	Hunters Point Shipyard
HQ	Hazard quotient
HSC	California Health and Safety Code
Hydro-Chem	Hydro-Chemical Services, Inc.
IAL	Interim ambient levels
IAS	Initial assessment study
IDW	Investigation-derived waste
IR	Installation restoration
IRP	Installation Restoration Program
IT	IT Corporation
JAI	Jerrold Avenue Investigation
kg	Kilogram
kV	Kilovolt
KVA	Kilovolt ampere
L	Liquid
lb.	Pound
LBP	Lead-based paint
lf	Linear feet
LNAPL	Light nonaqueous-phase liquid
LUST	Leaking UST site list
MARAD	U.S. Maritime Administration
MCL	Maximum contaminant level
MEK	Methyl ethyl ketone
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
MINS	Mare Island Naval Shipyard
msl	Mean sea level
MVA	MegaVolt-amperes

ABBREVIATIONS AND ACRONYMS (Continued)

N/A	Not applicable
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Command
NAVSTA TI	Naval Station Treasure Island
Navy	U.S. Department of the Navy
NAWQC	National Ambient Water Quality Criteria
NBC	National Broadcasting Company
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NE	Northeast
NEESA	Naval Energy and Environmental Support Activity
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NF	Nonfriable
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
NRDL	U.S. Naval Radiological Defense Laboratory
NW	Northwest
O&M	Operation and maintenance
OCB	Oil circuit breaker
Odaco	Odaco, Inc.
OFC	Oil-fused cutoff
OPA	Oil Pollution Act of 1990
OS	Open space
OSHA	Occupational Safety and Health Administration
O Sw	Oil switch
OU	Operable unit
oz	Ounce
PA	Preliminary assessment
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyls
PG&E	Pacific Gas and Electric Company
POTW	Publicly owned treatment works
PP	Proposed plan
ppb	Parts per billion
PPE	Personal protective equipment
ppm	Parts per million
PPY	Pickling and Plate Yard
PRC	PRC Environmental Management, Inc.
PRG	Preliminary remediation goal

ABBREVIATIONS AND ACRONYMS (Continued)

psig	Pounds per square inch-gas
PVC	Polyvinyl chloride
PWC	Navy Public Works Center
Q&RA	Quality and reliability assurance
QERA	Qualitative ecological risk assessment
qt	Quart
Ra-226	Radium-226
RAO	Remedial action order
RASO	Navy Radiological Affairs Support Office
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
ROD	Record of decision
RQ	Reportable quantity
RWQCB	California Regional Water Quality Control Board
S	Solid
SA	Site assessment
SARA	Superfund Amendments and Reauthorization Act
SCRS	Surface confirmation radiation survey
SCS	U.S. Soil Conservation Service
SE	Southeast
sf	Square feet
SFBPWC	San Francisco Bay Public Works Center
SFDA	San Francisco District Attorney
SFDPW	San Francisco Department of Public Works
SFFD	San Francisco Fire Department
SF-LOP	Local Oversight Program, Hazardous Materials Division of the City of San Francisco
SFPD	San Francisco Police Department
SFRA	San Francisco Redevelopment Agency
SI	Site inspection
SPCC	Spill Prevention, Control, and Countermeasure
SSEBS	Site-specific environmental baseline survey
SSPORTS	Supervisor of Shipbuilding, Conversion, and Repair, Portsmouth, VA, Environmental Detachment, Vallejo
STLC	Soluble threshold limit concentration
SupShip	Supervisor of Shipbuilding
SVOC	Semivolatile organic compound
SWPCP	Southeast Wastewater Pollution Control Plant

ABBREVIATIONS AND ACRONYMS (Continued)

SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
sw recl	Switch reclosure
TACAN	Tactical Air Navigation
TDS	Total dissolved solids
Tetra Tech	Tetra Tech, Inc.
TPH	Total petroleum hydrocarbons
TPH-d	Total petroleum hydrocarbons as diesel
TPH-g	Total petroleum hydrocarbons as gasoline
Triple A	Triple A Machine Shop
TSCA	Toxic Substances Control Act
TSD	Treatment, storage, or disposal
TSI	Thermal system insulation
TtEMI	Tetra Tech EM Inc.
TTLC	Total threshold limit concentration
UC	University of California
USC	United States Code
USCG	U.S. Coast Guard
USGS	U.S. Geological Survey
UST	Underground storage tank
V	Volts
VOC	Volatile organic compound
VSI	Visual site inspection
Wagner	Wagner Construction Company
WESTDIV	Naval Facilities Engineering Command, Western Division
WET	Waste extraction test
WTC	Wench Test Center
UST	Underground storage tank
xfmr	Transformer
yd^3	Cubic yards
YEI	YEI Engineers, Inc.

GLOSSARY OF TERMS

A-Aquifer – The unconfined to semiconfined upper aquifer at Hunters Point Shipyard (HPS) with groundwater at depths ranging from 2 to 15 feet below ground surface (bgs); the uppermost of three aquifers at HPS.

abatement – Reducing the amount or concentration of, or eliminating, pollution.

aboveground storage tank (AST) – A tank, usually for petroleum products or other chemicals, located above the ground surface, usually within secondary containment.

action level – A health-based or environmental-based standard for chemicals of concern used to guide risk assessments and remedial actions.

air pollution – The presence of contaminants or pollutant substances in the air that do not disperse properly which interfere with human health or welfare, or produce other harmful environmental effects.

alternative selection report (ASR) – A document that presents the results of an evaluation of the need for a temporary remedy created by point source related contamination which represents an impending threat to human health or the environment.

ambient level – The concentration of a chemical that is naturally present in the environment.

analyte – A chemical component of a sample to be determined or measured.

analytical method – A procedure that involves preparing a sample and using instruments and other steps to determine the quantity of the analyte in a sample.

applicable or relevant and appropriate requirement (ARAR) – In general, this term refers to environmental laws that are already in effect and need to be followed to protect human health and the environment. "Applicable" requirements are legally enforceable cleanup standards, standards of control, and other environmental protection standards that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site. "Relevant and appropriate" requirements are cleanup standards not defined as "applicable;" however, they address problems or situations similar to those encountered at a CERCLA site. Agencies may also designate "TBC" ARARs; that is, other requirements "to be considered." ARARs can be chemical-specific, location-specific, or action-specific.

aquifer – Water found between and in layers of material such as rock, sand, gravel, or soil below the earth's surface. Aquifers can yield a significant amount of water through wells or springs. Most aquifers used in the U.S. are within 1,000 feet of the earth's surface. For environmental, regulatory, and monitoring purposes, most agencies consider any water-producing soil to be an aquifer (even if flow is low), including Artificial Fill.

aquitard – A geologic unit of low permeability that can store groundwater and can slowly transmit or stop the flow of groundwater from one aquifer to another.

areas of concern (AOC) – Those areas at HPS identified during the aerial photograph review that might indicate prior releases of chemicals to the environment.

asbestos – A naturally occurring material that readily separates into long flexible fibers that, when handled, break down into finer fibers that can become airborne. These fine fibers may cause lung cancer when inhaled. Asbestos is suitable for use as a noncombustible (burn resistant), nonconducting (not easily transmittable), or chemically-resistant material. Asbestos has been used in the past to insulate buildings, including homes and schools.

asbestos lagging – Insulation made of asbestos used to keep pipes cool and prevent heat loss from steam pipes, boilers, and other heat-conducting conduits.

atom – Any of the smallest particles of an element that can form compounds with similar particles of other elements.

B

B-aquifer – The aquifer underlying and separated from the A-aquifer at HPS by 5 to 60 feet of Bay Mud Deposits. This aquifer occurs at the lower elevations of HPS; the middle aquifer of three at HPS.

Base Realignment and Closure (BRAC) – A federal act passed in 1988 in which the Defense Base Closure and Realignment Commission evaluates recommendations by the Secretary of Defense for military base closures. The commission conducts hearings on the impact of potential base closures and submits a list of recommended military base closures to the President. To date, 86 military bases, including HPS, have been designated for closure. Another 13 military bases will be realigned with other military bases or federal agencies.

Base Closure List – The U.S. Department of Defense (DoD) list of military installations designated for closure.

baseline risk assessment – A study of the potential health effects (current or future) caused by releases of a hazardous substance from a site without any actions to control or mitigate (see definition) the releases. A baseline risk assessment is the first step in the human health risk assessment (HHRA) (see definition). Other steps include developing preliminary remediation goals (initial cleanup goals to protect human health) and evaluating alternative remedies for a site.

Bay Conservation and Development Commission (BCDC) – The San Francisco regional agency dedicated to (1) preventing the unneeded filling of the San Francisco Bay, (2) providing public access, and (3) preserving shoreline areas for their intended use according to the Bay Plan.

bedrock – The solid rock that underlies all soil, sand, clay, gravel, and loose material on the earth's surface.

bedrock water-bearing zone – The lowest of three aquifers characterized at HPS that consist of discrete fractures or shear zones or weathered portions of the Franciscan Assemblage.

boring – A hole drilled into soil using an auger or other type of drill. Borings drilled for environmental purposes are drilled to allow collection of subsurface soil samples, and may be converted into groundwater monitoring wells.

BRAC Area Type – Property classifications developed by the DoD. Base property areas are classified into one of seven types based on the level of contamination present and the status of investigation and remediation. Type 1 property is considered "clean." Type 7 property is contaminated, little investigative data are available, and remediation has not occurred.

BRAC Cleanup Team (BCT) – A team formed under DoD guidance, consisting of representatives from the DoD, the U.S. Environmental Protection Agency (EPA), and the State of California, whose purpose is to help accelerate cleanup and to identify uncontaminated property for reuse.

C

California Special Animals – A broad term used by the Natural Heritage Division of the California Department of Fish and Game (CDFG) to refer to invertebrate and vertebrate taxa of concern, regardless of their legal status.

cancer risk of 10^{-6} – According to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the point of departure for determining preliminary remediation goals (PRG) for remedial alternatives. It denotes the upper boundary for a lifetime cancer risk of 1 extra cancer in a population of 1 million people.

cap – A layer of clay or other material through which water does not easily pass, installed over the top of a closed landfill to prevent entry of rainwater and runoff.

carcinogen – Any substance known to cause or contribute to the production of cancer.

chemicals of potential concern (COPC) – Chemicals that are potentially site-related and present in quantities that could be harmful to humans and the environment pending further assessment of potential risk.

chlorinated hydrocarbons – A class of long-lasting insecticides that are effective against a variety of insects and other organisms. These insecticides linger in the environment and accumulate in the food chain. Dichlorodiphenyltrichloroethane (DDT), aldrin, dieldrin, lindane, chlordane, and toxaphene are among this class of insecticides.

Clean Water Act (CWA) – A federal law passed in 1972 to control pollutants in water. The CWA established a national plan for spills and reporting, required water standards to be set, and established liabilities for spills.

cleanup – Actions taken to deal with a release or threatened release of hazardous substances that could affect public health or the environment. The term "cleanup" is often used broadly to describe various response actions or phases of remedial responses such as the remedial investigation (RI) and feasibility study (FS). (See "remedial responses," "remedial investigation," and "feasibility study.")

combined sewers – A sewer system that carries both sewage and storm water runoff. Normally, the system's entire flow goes to a wastewater treatment plant, but during a heavy storm, the water volume may be so great as to cause overflows. When this happens, untreated mixtures of storm water and sewage

may flow into receiving waters. Storm water runoff may also carry toxic chemicals from industrial areas or streets into the sanitary sewer system.

Community Environmental Response Facilitation Act of 1992 (CERFA) – This federal act, passed in 1992, requires military installations to identify clean or uncontaminated property for transfer to the community for use. In turn, the community should develop a reuse plan for the property, and the installation will clean up the property according to that plan.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). CERCLA, commonly called Superfund, was enacted by Congress in response to the dangers posed by sudden or otherwise uncontrolled releases of hazardous substances, pollutants, or contaminants into the environment. CERCLA, as amended by SARA, created a special tax that goes into a trust fund (Superfund) to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, EPA has the following options: (1) pay for the site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work, or (2) take legal action to force parties responsible for site contamination to clean up the site or pay back the federal government for cleanup costs. Although all federal facilities are required to comply with CERCLA and may be listed as "Superfund sites," funding for site cleanup is the responsibility of the federal agency responsible for the facility.

confirmation step – The step in an environmental investigation and remediation project during which samples are taken to confirm or verify that a remedial action has removed the contamination to acceptable levels.

contaminants – Any physical, chemical, biological, or radiological substance that has an adverse affect on air, soil, water, human, or ecological receptors.

creosote – A yellowish- to greenish-brown oily liquid obtained from coal tar and used as a wood preservative and disinfectant.

D

data gaps – Information needed but currently unavailable to evaluate various problems and identify solutions at a site.

Defense Base Closure and Realignment Act – A federal act passed in 1990 that requires a Defense Base Closure and Realignment Commission to be established in 1991, 1993, and 1995 to evaluate and identify additional military bases for closure. Also see BRAC.

Department – Department of Toxic Substances Control of the California Environmental Protection Agency (Cal/EPA).

dewatering – Removal or discharge of water from an aquifer, containment structure, or other structure such as a tank or dry dock, and also used to describe the removal of water from an excavation.

dip tanks – A tank or concrete vault usually found in industrial or manufacturing facilities that contains solvents or water used for cleaning parts of mechanical equipment. The metal parts are submerged or dipped into the solvent or water for cleaning or coating.

dredging – Removal of mud from the bottom of water bodies using a scooping machine.

E

early action – An action taken for the immediate removal of an impending threat. Examples of early actions are soil excavation or removal of contaminated groundwater.

emission – Pollution discharged into the atmosphere from smokestacks, vents, and surface areas of commercial or industrial facilities, residential chimneys, and motorized vehicles.

emissions trading – EPA policy that allows an industrial complex with several facilities to decrease pollution from one or more facilities while increasing it from others, as long as total results are equal to or better than previous emission goals. Facilities where this is done are treated as if they exist in a bubble in which total emissions are averaged out. Complexes that reduce emissions substantially may "bank" (save) their "credits" (total reduced emissions) or sell them to other industrial facilities.

endangered species – A species having so few individual survivors due to loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors that the species could soon become extinct (nonexistent) in all or part of its region.

environmental assessment – A written environmental analysis that is prepared pursuant to the National Environmental Policy Act (NEPA) to determine whether a federal action would significantly affect the environment and thus require preparation of an environmental impact statement (EIS).

environmental impact report (EIR) – A document required by the State of California by CEQA for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and list alternative actions.

environmental impact statement (EIS) – A document required of federal agencies by NEPA for major projects or legislative proposals significantly affecting the environment. A tool for decision-making, it describes the positive and negative effects of the undertaking and list alternative actions.

environmental restoration – An action or series of actions aimed at protecting human health and the environment by attempting to meet the reuse goals established by the community, and by complying with existing state and federal laws, regulations, and other requirements.

exploratory excavation – The simultaneous investigation and excavation of soils in areas of limited soil contamination. This is an example of an interim remedial action (temporary remedy) used to accelerate cleanup at a site.

F

feasibility study (FS) – The FS, which usually begins as soon as the RI is underway, evaluates cost-effective alternatives for remedy of contaminants at a site. (See "remedial investigation [RI].")

Federal Facility Agreement (FFA) – A contractual agreement between regulatory agencies, such as EPA and Cal/EPA, and the military, to facilitate the investigation and cleanup of former DoD properties, with enforceable deadlines for the completion of various activities.

fill – To deposit dirt and mud or other materials into aquatic areas (water bodies) to create more dry land, usually for agricultural or commercial development purposes.

finding of suitability to lease (FOSL) – A document used for the lease of real property from the U.S. Department of the Navy (Navy) to the City of San Francisco or another tenant.

finding of suitability to transfer (FOST) – A document used for the transfer by deed of real property from the Navy to the City of San Francisco or another deed holder.

floodplain – Land next to a river that becomes covered by water when the river overflows its banks.

formerly used defense site (FUDS) – Sites formerly owned by the military that have since been transferred by deed to other parties, including other government entities.

Franciscan Assemblage – A specific group of lithologic units, including sandstone, chert, altered greenstone, and serpentinite, that is found at the same stratigraphic level (see definition). The Franciscan Assemblage extends diagonally northwest to southeast through HPS.

friable – Readily crumbled or brittle, as in friable asbestos or friable soils.

G

groundwater – Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel. In aquifers, groundwater occurs in sufficient quantities that it can be used for drinking water, irrigation, and other purposes.

H

hazardous material – Any material that poses a threat to public health or the environment. Typical hazardous materials are those that are toxic, corrosive, ignitable, explosive, or chemically reactive.

hazardous waste – A solid waste or combination of solid wastes that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality (death) or serious irreversible or incapacitating reversible illness. A hazardous material no longer fit for its intended use.

hazard ranking system – A numerical scoring model that is based on many of the factors affecting risk at a site. The site scoring is based on data gathered from the preliminary assessment (PA), site inspection (SI), or listing SI. The hazard ranking scoring process is the primary mechanism for determining sites to

be included on the National Priorities List (NPL), and therefore, the sites eligible for Superfund-financed remedial action.

health-based levels (HBL) – An estimate of the maximum concentration of a chemical that one can be exposed to without significant effect. HBLs may be used as a reference for determining any removal (early action) or interim remedial (temporary remedy) needs.

heavy metal – A group of naturally occurring metallic elements that are heavy (dense or compact) for their size. Heavy metals can damage living things even at low concentrations and tend to accumulate in the food chain. Examples of heavy metals include cadmium, cobalt, iron, lead, mercury, nickel, and zinc.

housekeeping – Maintenance and disposal of debris and hazardous materials that have been damaged, abandoned, or collected on a site.

human health risk assessment (HHRA) – A study that identifies and measures the risks to individuals or populations resulting from a specific use or occurrence of a chemical. Measuring risks involves determining the effect on individuals and populations of a particular dose of a chemical. Identifying risk includes examining all the possible routes by which humans may be exposed to a chemical, such as through soil ingestion or contact through the skin. HHRAs are conducted during the site characterization phase of the RI and FS (see definition) process. Such assessments are used to determine the magnitude and probability of actual or threatened releases of hazardous substances to the environment.

Hunters Point ambient level (HPAL) – Concentrations of metals in soils that are naturally occurring at HPS.

Hunters Point Shipyard (HPS) – The naval shipyard located on Hunters Point, south of downtown San Francisco, California.

hydrocarbon – An organic compound composed of carbon and hydrogen. Hydrocarbons often occur as air pollutants from unburned or partially burned gasoline and from evaporation of industrial solvents, especially from refineries. Hydrocarbons include volatile (evaporates readily) and semivolatile organic (carbon-containing) compounds such as paints, solvents, and some wood-treating and electrical-insulating materials like polychlorinated biphenyls, also known as PCBs (see definition). There are also many naturally occurring hydrocarbons, such as in plants and animals and their by-products, as well as organic matter in soil.

hydrogeology – Geology of groundwater, with particular emphasis on the chemistry and movement of water.

I

initial assessment study (IAS) – The first environmental assessment at HPS conducted by Naval Energy and Environmental Support Activity (NEESA) in 1984. The IAS identified disposal sites and contaminated areas caused by past hazardous substance storage, handling, or disposal practices by the Navy at HPS.

installation restoration (IR) – A designation for a site that has undergone PA and SI levels of investigation under the CERCLA (see definition) process and has been recommended for further investigation at the RI level. The designation is based on the detected presence of contamination by hazardous substances and the need to adequately characterize the substances' nature and extent.

Installation Restoration Program (IRP) – A program under the Navy's Environmental Restoration Program where sites that have undergone the PA (see definition) and SI (see definition) phases of investigation are evaluated further because the data collected from the site indicate that there may be a risk to human health. Phases of the IRP include conducting a PA to establish if historical information or visual evidence for contamination exists; a SI to confirm the PA; a RI to characterize the nature and extent of contamination at a site; a FS to select the most appropriate remedy; a record of decision (ROD) to document the selected remedy and schedule for implementation; and implementing and maintaining the selected remedy.

intertidal zone – The geographic area between the extremes of high and low tide along the coast.

invertebrate – An animal having no backbone or spinal column. Examples of invertebrate animals are mollusks, spiders, and worms.

investigation-derived waste (IDW) – Wastes generated under the IRP from sampling to determine the presence of contaminants. IDW may include contaminated soil and groundwater, but also may include uncontaminated soil and groundwater that was collected during sampling.

ionizing radiation – Radiation that can produce ionization. Ionization happens when the electric charge of an atom (see definition) or group of atoms increases or decreases.

Islais Valley Groundwater Basin – One of two Bayside groundwater basins underlying HPS; this groundwater basin consists of 5,600 acres, with a capacity of 13,000 acre feet.

J

Jurassic-Cretaceous – A period of geologic time and the corresponding system of rocks formed during that time. The Jurassic-Cretaceous period ranges from 65 to 200 million years before the present.

L

landfill – Disposal sites including sanitary landfills and secure chemical landfills. Sanitary landfills are land disposal sites for nonhazardous solid wastes where the waste is spread in layers, compacted to the smallest practical volume, and then covered with a material at the end of each operating day. Secure chemical landfills are disposal sites for hazardous waste and are selected and designed to minimize the chance of release of hazardous substances into the environment.

lead – A heavy metal (see definition) that is hazardous to human health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations.

M

maximum contaminant level (MCL) – The primary drinking water quality standard to protect human health; established under the Safe Drinking Water Act (42 United States Code [USC] 300f), which protects groundwater and drinking water sources.

mitigate – Mitigation includes the following: (1) minimizing the problem by limiting the amount or magnitude of an action and its implementation; (2) correcting the problem by repairing, rehabilitating, or restoring the affected environment; and (3) reducing or eliminating the problem over time by preservation and maintenance operations during the life of an action.

monitoring wells – Special wells drilled at specific locations on or off site where groundwater can be sampled at selected depths and studied to determine such things as the direction in which the groundwater flows and the types and amounts of contaminants present.

N

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – The federal regulation that provides guidance to determine the sites that will be cleaned up under the Superfund program and the program to prevent or control spills into surface waters or other portions of the environment.

National Pollutant Discharge Elimination System (NPDES) – A provision of the Clean Water Act (CWA) that prohibits discharge of pollutants into waters of the U.S. unless a special permit is issued by the EPA, a state, or (where delegated) a tribal government on an Indian reservation.

National Priorities List (NPL) – Compiled by the EPA, this is a list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response. The list is based primarily on the score a site receives on the hazard ranking system (see definition). EPA is required to update the NPL at least once a year. HPS was placed on the NPL in 1992.

Navy Assessment and Control of Installation Pollutants (NACIP) – The Navy's program in the early 1980s used to identify and control environmental contamination from past use and disposal of hazardous substances at Naval and Marine Corps facilities. This program consisted of three phases: (1) the IAS, (2) the confirmation study, and (3) remedial action.

Naval Energy and Environmental Support Activity (NEESA) – Now called the Naval Facilities Engineering Support Center.

National Emissions Standards for Hazardous Air Pollutants (NESHAP) – A series of standards developed under Title III of the Clean Air Act (CAA) Amendments for 189 hazardous air pollutants.

nonfriable – Not readily crumbled or brittle, usually used to describe asbestos or soil.

Notification of Variance – Documentation needed to inform regulatory agencies of changes to the agreed-upon work plan.

O

open space – A term developed by the City and County of San Francisco Planning Department (CCSFPD) for areas at HPS not designated for industrial, commercial, or residential use.

operable unit (OU) – A term for geographic units where each of a number of separate activities undertaken as part of a Superfund site cleanup. For example, at HPS, the site was divided into five OUs based on the preliminary evaluation of potential threat to human health and the environment, location of sites, and similarities in investigation or remediation strategy and chemical conditions. OUs were replaced by the current geographical parcels and subparcels to facilitate the Navy's need to transfer these units.

operation and maintenance (O&M) – Activities conducted at a site after a Superfund site action is completed to insure that the action is effective and operating properly.

ordnance – All weapons used by the military, including ammunition, bullets, missiles, combat vehicles, and supplies.

organic – Referring to, or from, living organisms; in chemistry, any compound containing carbon.

organic chemical compounds – Animal- or plant-produced substances containing mainly carbon, hydrogen, and oxygen.

organic solvent – A liquid made up of carbon compounds that is capable of dissolving another substance. The chief uses of organic solvents are in paints, varnishes, lacquers, printing inks, rubber processing, pharmaceuticals, and dry cleaning.

P

parcel – Areas established as part of the IRP to facilitate organization of the restoration efforts. There are six parcels at HPS: Parcels A through F.

particulates – Fine liquid or solid particles, such as dust, smoke, mist, fumes, or smog, found in air or emissions.

pesticide – Any chemical designed to kill weeds, insects, fungi, rodents, and other such things that humans consider to be undesirable. Pesticides include DDT (now banned in the U.S.) and ant spray available for purchase at any store.

petroleum – Viscous, dark greenish-brown, strong-smelling liquid containing mixture of hydrocarbon compounds plus small amounts of oxygen, sulfur, and nitrogen compounds.

pile – A heap of waste.

plume – A term used to describe the bulk or size and distribution of a contaminant in air, soil, sediment, or water, including groundwater. A plume may spread within soil from areas of high to low porosity (tiny spaces/openings) and eventually could affect nearby groundwater sources.

point sources – Locations that do not move (stationary) from which pollutants are discharged. The term "point source" also includes any single identifiable source of pollution like a pipe, ditch, ship, pit, or factory smokestack.

pollutant – Generally, any substance introduced into the environment that has a negative effect on the usefulness of a resource.

polychlorinated biphenyl (PCB) – A class of manufactured chemicals able to withstand high temperatures and insulate electrical currents. PCBs were traditionally used in electrical transformers, capacitors, lighting ballasts, and other similar equipment.

polynuclear aromatic hydrocarbon (PAH) – A group of chemicals made of two or more cyclic (arranged in a ring or closed chain) structures joined together, such as benzene rings, that consist of carbon and hydrogen. PAHs are produced during the combustion (burning) of fossil fuels. For example, PAHs are present in soot, coal tar, tobacco, smoke, and petroleum pollutants. The most commonly known PAH is naphthalene, a product widely used as a moth repellant.

preliminary assessment (PA) – The collection and review of all available information that may include off-site visits and interviews to evaluate the source and nature of hazardous substances present, and to identify the potentially responsible party. At the conclusion of a PA, a site may be referred for further action, or it may be decided that no further action is needed.

preliminary remediation goal (PRG) – PRGs are initial cleanup goal concentrations that are protective of human health and the environment.

presumptive remedies – A remedial action (remedy) such as installing a slurry wall (see definition) and cap (see definition) that have been proven to work at other sites with similar features.

publicly owned treatment works (POTW) – A waste treatment works owned by a state, local government, or Indian tribe, usually designed to treat domestic wastewater.

pumping station – Mechanical devices installed in sewer or water systems or other liquid-carrying pipelines that move liquids to a higher level.

Q

qualitative – Determining what makes up a substance without considering the amount of the substance.

quality assurance and quality control (QA/QC) – A system of procedures, checks, audits, and corrective actions to make sure that all research, design, and performance; environmental monitoring and sampling; and other technical and reporting activities are of the highest achievable quality.

quantitative – Determining the amounts or proportions of the parts in a substance.

Quaternary – A measure of geologic time and the corresponding system of rocks formed during that period. The Quaternary period ranges from 2 to 3 million years ago to the present.

GLOSSARY OF TERMS (Continued)

R

radiation – Any form of energy reproduced as rays, waves, or streams of energy.

radioactive material – Material that spontaneously releases ionizing radiation (see definition).

radioactivity – The spontaneous release or emission of radiation.

radon – A decay product of uranium that occurs naturally in some geologic formations (rocks), primarily granitic rock. Radon may be hazardous in airtight buildings where the radon gas cannot escape.

rare species – Although not now threatened with extinction (endangered), the animal or plant species has been reduced to such small numbers throughout all or a significant portion of its range that it may become endangered.

Record of Decision (ROD) – A public document that explains which cleanup alternative(s) will be used at a NPL site. The ROD is based on information and technical analysis generated during the RI and FS (see definitions) and consideration of public comments and concerns.

recycle/reuse – The process of producing less waste by recovering usable products that might otherwise become waste. Examples are recycling materials such as aluminum cans, wastepaper, and bottles and giving old clothes and appliances to organizations for use by other people.

remedial action – The actual construction or implementation phase that follows the remedial design of the selected cleanup alternative (remedy) at a site on the NPL. The selected alternative is documented in the ROD.

remedial action order (RAO) – A directive from the regulatory agency stating the need for a remedial action.

remedial action plan – A document which follows the RI/FS process by the State of California, used to document the preferred remedial alternative.

remedial design – The engineering phase that follows the ROD where technical drawings and details that state the type, size, and quality of materials are developed for the subsequent remedial action (remedy) at a site on the NPL.

remedial investigation (RI) – Along with the FS, the RI provides the framework for determining appropriate remedial actions (remedy) at Superfund sites. In a RI, investigative and analytical studies are usually performed at the same time as the FS, and together are referred to as the RI/FS. The intent is to gather the data necessary to determine the type and extent of contamination at the Superfund site, establish criteria for cleaning up the site, identify and screen cleanup alternatives for remedial action (remedy), and analyze in detail the technology and costs of the alternatives.

remedial response – A long-term action that stops or substantially reduces a release or threat of a release of a hazardous substance that is serious but not an immediate threat to public health.

remediation – The act of correcting or counteracting something. When used with reference to hazardous materials, remediation means any activities (remedy) undertaken to clean up, remove, contain, treat, stabilize, monitor, or otherwise control hazardous materials.

remedy – Something that corrects, counteracts, or removes an adverse situation.

removal action – An immediate action taken over the short term to address a release or threatened release of a hazardous substance.

Resource Conservation and Recovery Act (RCRA) – A federal law passed in 1976 and amended in 1984 by the Hazardous and Solid Waste Amendments. RCRA established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in transporting, treating, storing, and disposing of hazardous waste. RCRA is designed to prevent new, uncontrolled hazardous waste sites.

response action – A CERCLA-authorized action involving either a short-term removal action or a long-term removal response that may include but is not limited to the following: (1) removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment, or destruction; (2) containing the waste safely on site; (3) destroying or treating the waste on site; and (4) identifying and removing the source of groundwater contamination and halting further migration of contaminants.

restoration – Measures taken to return a site to pre-violation conditions.

runoff – That part of precipitation (rain), snow melt, or irrigation water that runs off the land into streams or other surface water.

S

sandblast – The process of using sand for such tasks as removing paint from buildings or ships. Its residues, called "sandblast waste," can be a source of contamination.

sandblast baghouse – A structure used to house sandblast waste.

sanitary sewers – Underground pipes intended to carry off only domestic or industrial waste, not storm water.

scrap – Materials discarded from manufacturing operations that may be suitable for reprocessing.

sediments – Soil, sand, and minerals washed from the land into water, usually after rain. These materials may pile up in reservoirs, rivers, and harbors, destroying fish-nesting areas and holes where aquatic (water) animals live; they may cloud the water so that sunlight needed for development and growth does not reach aquatic (water) plants.

semivolatile organic compound (SVOC) – Hydrocarbons or volatile organic compounds (VOC) with low evaporation rates, such as the laboratory cleaner phenol, pesticides, PCBs, diesel, and motor oil. (see "hydrocarbons" and "volatile organic compound.")

serpentinite – A rock consisting almost wholly of serpentine group minerals. Serpentines are commonly green or greenish-gray and have a greasy or silky luster. Serpentines are usually compact but may be fibrous, granular, or massive. Serpentines are very common in California.

site inspection (SI) – The step that follows a PA (see definition) where further action is recommended for a site. SIs include collection of samples to help determine the extent of a problem.

solid waste – Discarded material such as solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial mining, or agricultural operations or community activities. A solid waste also includes any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility.

solvent – A substance capable of dissolving another substance to form an even mixture. Some uses of solvents include degreasing, cleaning, fabric scouring, and diluting. Examples of solvents include water, paint thinner, and freon.

South Groundwater Basin – One of two Bayside groundwater basins underlying HPS; this groundwater basin consists of 2,100 acres with the capacity of 5,000 acre-feet.

storm sewer – A system of pipes that carries only runoff water from building and land surfaces.

stratigraphic level – A stratum is a layer of rock that is visually different from other layers above and below it. A stratigraphic level is the layer of rock (strata) that is between or next to another layer.

subparcel – Units defined by the CCSFPD to facilitate further land-use planning.

sump – Any pit or reservoir that meets the definition of tank and the troughs/trenches connected to it that serve to collect waste for transport to waste storage, treatment, or disposal facilities, except those that are exempted by special rule. A sump also means any lined pit or reservoir that serves to collect liquids drained from a leachate collection system (a system that separates things by percolating a liquid through it) and removal system or leak-detection system designed for subsequent removal from the system.

Superfund – The program operated under the legislative authority of CERCLA that funds and carries out the EPA solid waste emergency and long-term removal remedial activities (remedies). These activities include establishing the NPL, investigating sites for inclusion on the list, determining their priority level on the list, and conducting or supervising the cleanup and other remedial actions.

surface water – Water bodies that are aboveground, such as rivers, lakes, and streams.

T

toxic – Harmful to living organisms.

Toxic Substances Control Act (TSCA) – A federal law passed in 1976 that enables EPA to establish a database on the effects of chemical substances on health and the environment and to regulate the manufacture, distribution, processing, use, and disposal of chemicals that pose an unreasonable risk to people and the environment.

transite – An asbestos cement mixture used to make low-weight, high-strength pipes to convey air, steam, water, and wastewater.

U

underground storage tank (UST) – A tank located all or partially underground that is designed to hold gasoline or other petroleum products or chemical solutions.

U.S. Environmental Protection Agency (EPA) – The regulatory agency established in 1970 by Presidential Executive Order that brings together parts of various government agencies involved with the control of pollution.

V

verification step plan of action – The first part of the NACIP Phase II confirmation study.

vertebrate – An animal (mammal, bird, reptile, amphibian, or fish) with a segmented spinal column (a column of bones in a segment like the human backbone) together with a few primitive forms in which the backbone is represented by a notochord (rod-like chord).

visual site inspection (VSI) – An inspection limited to visual observations.

volatile organic compound (VOC) – Organic (carbon-containing) compounds that evaporate (volatilize) readily at room temperature. An example of a VOC is the solvent and degreaser acetone and industrial solvents such as benzene (found in gasoline) and perchloroethene ("perc"), which is used by dry cleaners.

W

water-bearing zone – The zone within a geologic unit containing an aquifer.

wetland – An area that is regularly wet or flooded and has a water table that stands at or above the land surface for at least part of the year. Coastal wetlands extend back from estuaries and include salt marshes, tidal basins, marshes, and mangrove swamps. Inland freshwater wetlands consist of swamps, marshes, and bogs.

EXECUTIVE SUMMARY

The final basewide environmental baseline survey (EBS) report prepared for Hunters Point Shipyard (HPS), San Francisco, California, summarizes environmental information gathered by Tetra Tech EM Inc. (TtEMI), formerly known as PRC Environmental Management, Inc. (PRC), for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command, Engineering Field Activity West. This document is based on (1) existing environmental information gathered during the periods of May to December 1995 and September to November 1997, and (2) current Installation Restoration Program (IRP) reports related to the storage, release, treatment, or disposal of hazardous substances or petroleum products at HPS. Figure ES-1 shows the geographic location of HPS. Figure ES-2 depicts the area for which a records search and review were conducted for the purposes of this report. The area includes the installation itself, as well as the adjacent property, defined as the area outside HPS within a 1-mile radius of the HPS boundary.

The text, tables, figures, appendices, and subparcel reports of the final HPS EBS Revision 01 document were prepared as follows:

- The majority of the text and tables have been updated in some manner; only Chapters 4 and 6 tables were unaffected. Due to parcel and installation restoration (IR) boundary changes at HPS, almost all figures have been changed to reflect the current conditions at HPS. The number of figures has also been reduced from the number that appeared in the original EBS (dated June 3, 1996).

- New data were added to the subparcel reports. The tables in the subparcel reports pertaining to polychlorinated biphenyls (PCB) equipment, radiation, aboveground storage tanks (AST), underground storage tanks (UST), asbestos, lead, air monitoring, and the rationale for assigning the environmental condition of property (ECP) category classifications have been completely updated. New information has been added or deleted if incorrect from all other tables appearing in the subparcel reports.

- The accuracy of certain tables that appear in Volume I and the subparcel reports are time-dependent. The visual site inspections (VSI) reflect conditions at HPS only through 1995. The titles of these tables reflect the time to which they are accurate. Tables with no time designations may be considered to reflect current conditions at HPS unless otherwise specified.

- The EBS subparcel reports are in alpha-numeric order (same order as they appear in Table 7-1 in Chapter 7, Volume I). The tabs are color coded by parcel as follows:

Parcel	Tab Color
A	Yellow
B	Red
C	White
D	Green
E	Blue
F and Other (formerly used defense sites [FUDS])	Orange

- Abbreviations, acronyms, and references used in Volume II are listed in the Abbreviations and Acronyms and References sections of Volume I.

The main purpose of the basewide EBS is to aid in the implementation of President Clinton's July 2, 1993 decision to expedite and improve environmental response actions at and facilitate the transfer and reuse of U.S. Department of Defense (DoD) properties. This basewide EBS fulfills requirements of Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Community Environmental Response Facilitation Act of 1992 (CERFA). The HPS basewide EBS gathers and analyzes environmental and related data to (1) provide a compilation of environmental data and findings in text and in a relational database, to be continually updated; (2) identify CERFA-clean parcels; (3) support conclusions that portions or subparcels of the base, although not CERFA clean, are in such a condition that the Navy may issue deeds to transfer the property on the basis that "no remedial action is required"; (4) classify the facility property according to the area categories, as discussed in Section 2.9, Chapter 2 of this report, "Property Classification"; (5) facilitate reuse decisions; and (6) provide information about subparcels that may require further investigation or response actions.

This document integrates current environmental information regarding environmental compliance, IR, and property reuse programs for HPS. Under the Navy's IRP, HPS was divided into five contiguous geographic "parcels" in 1992, A through E, which followed the cleanup sequence proposed at that time. In 1995, the submerged tidal and intertidal lands of HPS, an area of approximately 443 acres that lies below the waters of San Francisco Bay, was designated as Parcel F. Within each IRP "parcel," several sites are contaminated (IR sites) or require an assessment or inspection (site assessment or site inspection [SI] sites). In this report, land units designated according to the reuse plan prepared by the City of San Francisco are referred to as "subparcels," followed by the designation number given by the City of San

Francisco, and land units investigated under the IRP are referred to as "parcels" (A through F, as appropriate). The City of San Francisco has designated 60 subparcels at HPS. Two additional areas (Parcel F and FUDS) were also evaluated in this EBS report. Whenever possible, throughout the EBS, cross-references are made among subparcels, parcels, and IR and SI sites. Table ES-1 provides a cross-reference list of subparcels, parcels, and IR and SI sites, and also includes USTs within each parcel and subparcel.

TtEMI used the following general scope of work to prepare the basewide EBS Revision 00:

- Review available information and records in the possession of the DoD components
- Perform a VSI of the property
- Review recorded chain-of-title documents, focusing on ownership history of the property that may have had an environmental impact
- Analyze aerial photographs that may reflect prior uses of the property
- Interview current and former employees and tenants of the facility
- Perform a VSI of non-Navy property adjacent to HPS that may have an environmental impact on HPS
- Compile all the information gathered during the EBS into a relational database

TtEMI used the following approach to prepare the basewide EBS Revision 01:

- Survey tenants leasing buildings and areas from the Navy (Navy tenants) to collect data on disposal, storage, or release of hazardous materials at HPS buildings
- Update the EBS compliance database with current HPS information on asbestos, PCB equipment, hazardous materials, ASTs, USTs, IRP sites, land use, and other data appropriate to current conditions at HPS
- Update text, figures, and tables to reflect current conditions at HPS

The HPS basewide EBS, the HPS basewide finding of suitability to lease (FOSL) (TtEMI 1998a), and the BRAC Cleanup Plan (BCP) (PRC 1997b) should be considered companion documents that contain overlapping information. In 1992, the Navy decided to forego the preparation of a basewide EBS for HPS because it determined that only 5 percent of HPS land area would be classified as CERFA-clean; however, as more interim and long-term reuse leases were contemplated by the City of San Francisco, the

lack of a basewide EBS hindered an expeditious lease and transfer process at HPS. The HPS BCP Revision 03, updated March 1997 (PRC 1997b), is considered the roadmap for the development and selection of remedial actions that will reduce environmental risk in a manner consistent with statutory requirements. The BCP was developed to provide a management tool for the BRAC Cleanup Team (BCT) and concerned parties for planning environmental restoration and compliance activities at HPS. The BCP reflects a comprehensive, bottom-to-top program review prepared in consultation with the BCT to facilitate the return of HPS property to the community for beneficial use. The basewide EBS should be considered the backbone that provides supporting information needed to identify areas that are (1) suitable for transfer by deed, (2) suitable for reuse if appropriate restrictions and requirements are put in place, and (3) unsuitable for transfer or immediate reuse.

The basewide FOSL (TtEMI 1998a) and the Parcel A finding of suitability to transfer (FOST) (PRC 1996c) documents should be considered the documents to guide the transfer of HPS to the City of San Francisco. The basewide FOSL, Parcel A FOST, and other HPS site-specific FOSLs and FOSTs are the culmination of all investigations performed and reports written for HPS. FOSLs and FOSTs evaluate the existing on-site environmental conditions for reuse. They identify the necessary restrictions and notifications in order to lease and transfer land.

HPS properties include buildings and immediately adjacent land, structures, docks, dry docks, and open land areas. Table ES-2 lists the subparcels' ECP area type classification categories. Information from the BCP (PRC 1997b), from the VSIs performed for this EBS, and from personnel responsible for current investigative work was used to determine the ECP category classification for each subparcel, building, or area. Asbestos, lead-based paint, and radon issues were not considered as factors in property classification.

Some subparcels included more than one ECP area type property category, reflecting the varying status of areas and buildings within the subparcel. The ECP area type categories are numbered 1 through 7. In cases where two or more classification types occur in a subparcel, the most conservative ECP area type designation is used as the overall property type for the subparcel. The data are current as of the date of preparation of the draft version of this document (May 1, 1998). The environmental status of each subparcel and each IR or SI site are summarized in Chapter 5 and Appendix G of this report. Complete tabular printouts of the EBS relational database for each subparcel are included in Volume II of this basewide EBS.

The seven ECP area type categories are briefly summarized in the following paragraphs. See Table ES-2 for the HPS subparcels in each ECP area type.

Category 1 – Areas Where No Release or Disposal of Hazardous Substances or Petroleum Products Has Occurred (Including No Migration of These Hazardous Substances From Adjacent Areas)

Category 1 areas are those areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). This area type is further defined as follows: a geographically contiguous and mappable area where the results of investigation show that no hazardous substances or petroleum products were released into the environment or disposed of on site property. A determination of this parcel type cannot be made unless a minimum level of information gathering and assessment has been completed. In accordance with Section 120(h)(4) of CERCLA as amended by CERFA, all such determinations of this area type (that is, "uncontaminated") were made on the basis of the following:

- Records search of the area in question and adjacent property
- Review of aerial photographs of the area
- VSI of the area and adjacent property
- Interviews with current employees or tenants regarding their knowledge of past and current activities on the property

If information gathered from these efforts indicated that hazardous substances or petroleum products had been released or disposed of in the area, the geographic location was classified as another area type. Ten subparcels are classified as overall Category 1. These subparcels are mainly located in Parcel A and constitute open space, residential units, and business buildings.

Category 2 – Areas Where Only Release or Disposal of Petroleum Products Has Occurred

Category 2 areas are those areas where release or disposal of petroleum products has occurred. This area type is further defined as follows: a geographically contiguous and mappable area where the results of investigations show only that release or disposal of petroleum products has occurred. No subparcel was classified Category 2.

Category 3 – Areas Where Release of Hazardous Substances Has Occurred, but at Concentrations That Do Not Require a Removal or Remedial Action

Category 3 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action because contamination is below action levels. This area type is further defined as follows: a geographically contiguous and mappable area where environmental evidence demonstrates that hazardous substances have been released or disposed of, but are present in quantities that require no response action to protect human health and the environment. Such quantities of hazardous substances can be below defensible detection limits, or can be above detection limits but below action levels. Below action levels means that, in the absence of installation-specific risk-based or standards-based criteria, the concentration of any hazardous substance in any medium does not exceed chemical-specific applicable or relevant and appropriate requirements (ARAR).

Designation of this area type also means that estimates of risks associated with contamination at such areas do not:

- Exceed an excess lifetime cancer risk (ELCR) of 1×10^{-6} for any carcinogenic hazardous substance or petroleum constituent detected in any medium;
- Result in a hazard quotient (HQ) above 1.0 for any noncarcinogenic hazardous substance or petroleum constituent detected in any medium;
- Result in a hazard index (HI) above 1.0 for all noncarcinogenic hazardous substances and petroleum constituents accumulated across all pathways;
- Exceed an ELCR of 1×10^{-4} for any carcinogenic hazardous substance accumulated across all pathways; and
- Result in an HI above 1.0 for all noncarcinogenic hazardous substances accumulated across all pathways.

A Category 3 area determination cannot be made with confidence unless a minimum level of information gathering and a SI or equivalent level of effort has been completed that includes biased field sampling and laboratory analysis to support a conceptual understanding of the area. Such determinations for HPS subparcels were made on the basis of the results of the human health risk assessment performed for each parcel.

One subparcel in Parcel B was classified as overall Category 3. This subparcel requires no remedial actions because contaminants were not detected at concentrations that endanger human health or the environment. Some IR sites are classified Category 3, meeting the above-listed criteria.

Category 4 – Areas Where Release of Hazardous Substances Has Occurred, and All Remedial Actions Necessary to Protect Human Health and the Environmental Have Been Taken

Category 4 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken. This area type is further defined as follows: a geographically contiguous and mappable area where all remedial actions necessary to protect human health and the environment have been taken. Category 4 areas include those areas in which hazardous substances are known to have been released or disposed of on the property. However, all remedial actions necessary to protect human health and the environment, with respect to any hazardous substance remaining on the property, have already been taken to meet the provisions of CERCLA Section 120(h)(3). "All remedial action has been taken" means that the construction and installation of an approved remedial design has been completed, the remedy has been demonstrated to the regulating agency, and the remedy has been operating properly and successfully (in practice, usually for 1 year).

Areas classified Category 4 may be called "formerly contaminated," since remediation is complete. Five subparcels are classified as overall Category 4.

Category 5 – Areas Where Release of Hazardous Substances Has Occurred and Removal or Remedial Actions are Under Way, but All Required Actions Have Not Yet Been Implemented

Category 5 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, removal and/or remedial actions are underway, but all required remedial actions have not yet been implemented. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances are confirmed based on the results of sampling and analysis, and are contained in electronic databases and/or environmental restoration and compliance reports. This area type contains contaminant concentrations above action levels and remedial systems or actions have not been completely instituted. Therefore, the area does not meet the criteria that would allow a determination of a Category 3 or 4 area. Remedial systems for Category 5 areas are partially or entirely in place, but have not been fully demonstrated.

Six subparcels, all in Parcel B, are classified as overall Category 5. Several IR sites are also classified Category 5. Remedial actions in these areas have been determined and are currently underway. Subparcel-specific sites where some remediation actions have been taken but not all remediation actions have been determined may be tentatively classified Category 5. Examples of these IRP sites are IR-01/21, IR-02, and IR-03 in Subparcel S-OS.

Category 6 – Areas Where Release of Hazardous Substances Has Occurred, but Required Actions Have Not Yet Been Implemented

Category 6 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, but required response actions have not yet been implemented. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances are confirmed based on the results of sampling and analysis as contained in electronic databases and/or environmental restoration and compliance reports. This area type contains contaminant concentrations above action levels; therefore, the area does not meet the criteria that would allow determination of a Category 3 area. In addition, required remedial systems have not yet been selected or implemented that would allow a determination of a Category 4 or 5 area.

Thirty-eight subparcels are considered as overall Category 6. Parcel F is also considered Category 6, but is not part of a "real" subparcel. Subparcels were classified Category 6 if one of the following statements applied:

- The type or necessity for remedial action has not been determined, but remedial action will probably be required.
- Remedial actions are necessary, but not yet planned or designed.
- Remedial actions are planned, but not yet implemented.

Category 6 areas are present in Parcels B, C, D, E, and F.

Category 7 - Unevaluated Areas or Areas Requiring Additional Evaluation

Category 7 areas are unevaluated or require additional evaluation. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is suspected, but not well-characterized. The determination is based on the results of a properly scoped records search, chain-of-title review, aerial photograph review, VSI, employee

interviews, and possible sampling and analysis. Category 7 sites do not fit, with certainty, any of the previous area types because evaluation efforts have not occurred, or are inconclusive.

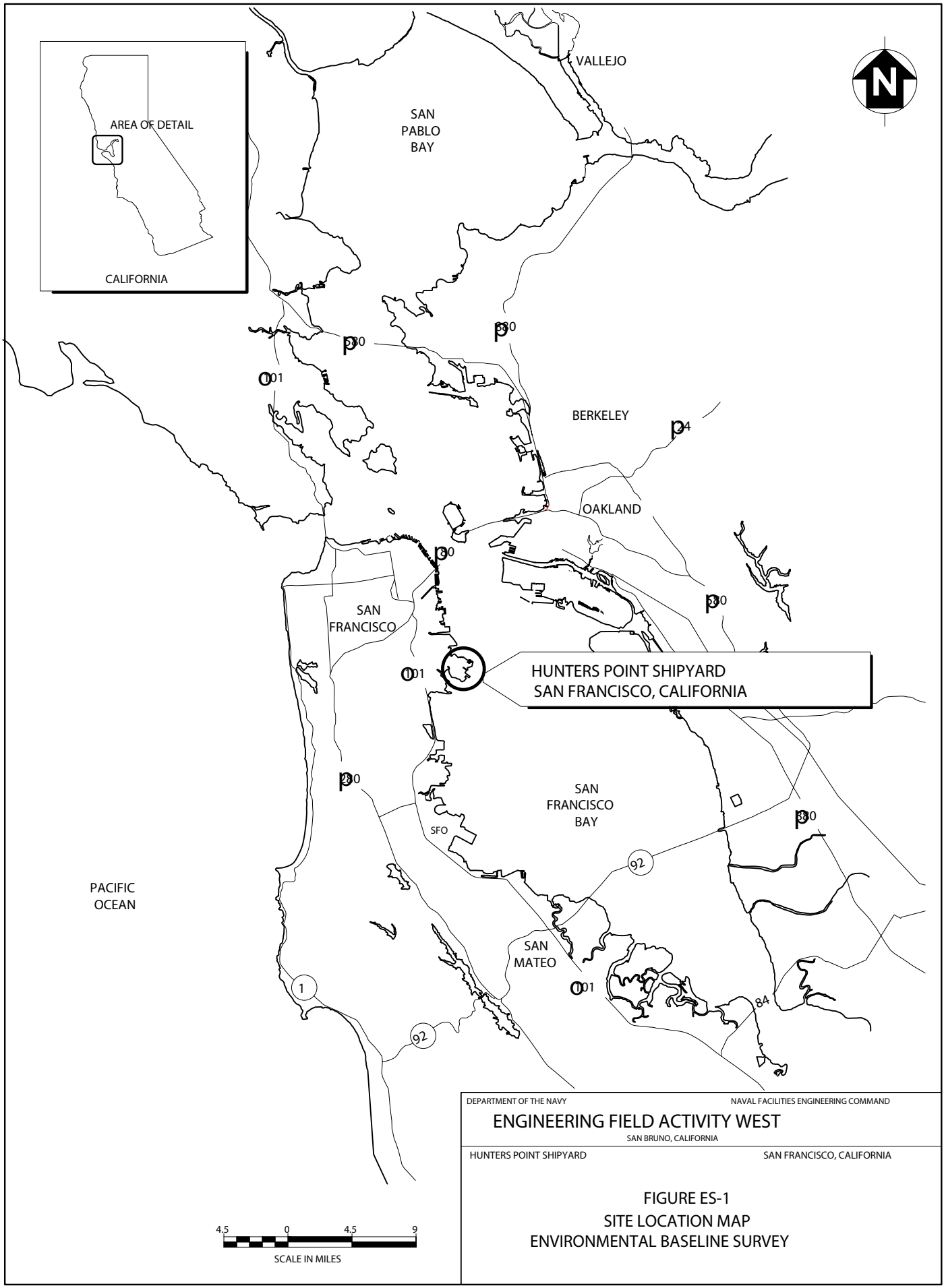
More than four gigabytes of investigative data and several bookcases of environmental reports exist for HPS. To state that any portion of a subparcel is unevaluated would be inaccurate. Data exist for every subparcel at HPS, even if the existing data are not absolutely conclusive. Any subparcel for which data exist, even if the preference is to gather additional data before developing detailed remedial action plans, has been classified Category 6 property. No Category 7 properties are present at HPS.

Properties classified in Categories 1 through 6 may be considered suitable for lease or transfer; however, only Category 1 properties are "CERFA-clean." "CERFA-clean" properties are defined as those properties classified as DoD area Category 1. Category 1 properties are uncontaminated. No storage, release, or disposal of hazardous substance or petroleum products has occurred on these properties. The only subparcels at HPS meeting overall Category 1 criteria are H-49, H-50, H-51, H-52, H-54, H-55, H-56, H-57, N-17, and S-46. Based on a review of readily available information, no releases, disposal, or migration of hazardous substances to these subparcels have been documented.

Subparcels classified as Categories 2, 3, 4, 5, or 6 are potentially suitable for lease or transfer provided that the following criteria are met for a subparcel:

- It is suitable for the intended use
- It is protective of human health and the environment
- Adequate notice has been given for a transfer or lease
- The transfer or lease will not substantially delay necessary response action
- Response action assurances are given (Section 334 of 1997 Appropriations Act amending Title 42 USC 9620[h][3][CERCLA])

Parcel F was categorized as an ECP Category 6 property because the type or necessity of remedial action required has not been determined.



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

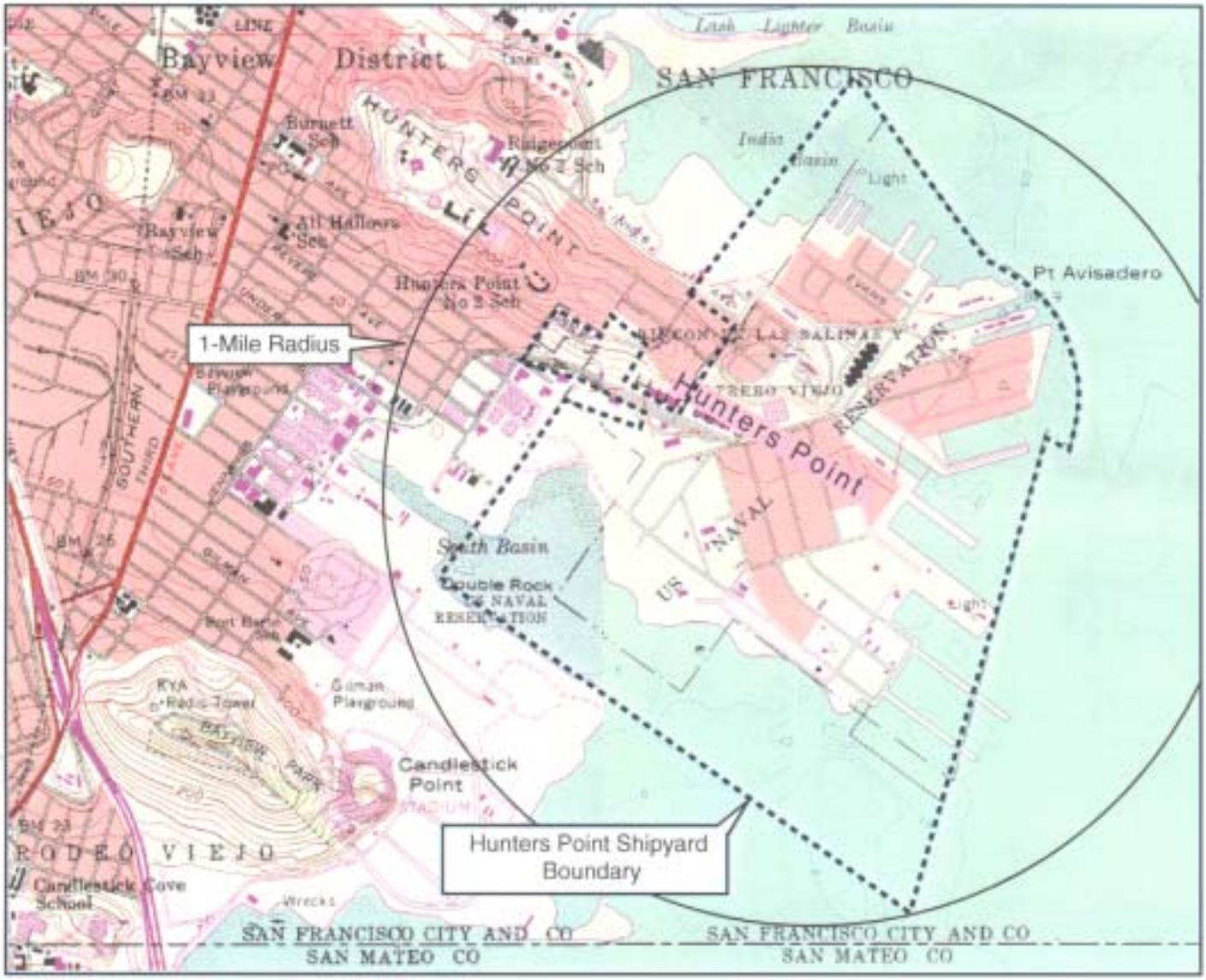
HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE ES-1

SITE LOCATION MAP

ENVIRONMENTAL BASELINE SURVEY

3/16/98 DN VEC O:\HUNTER\EBS\HPMAP.DWG



SOURCE: Base from USGS San Francisco South and Hunters Point Quadrangles, 1980.
Revisions shown in purple compiled from aerial photographs taken in 1968 and 1973.

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SCALE IN FEET

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE ES-2

AREA SURVEY
ENVIRONMENTAL BASELINE SURVEY

TABLE ES-1

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel A[b]			
H-48	816, 817A, and 818	SI-41	None
H-49	Residential units	None	None
H-50	Residential units	None	None
H-51	158, 322, and 915	None	None
H-52	Residential units	None	None
H-53	906, residential units, and water tank	IR-59 JAI and SI-43	None
H-54	Residential units	None	None
H-55	908 and residential units	None	None
H-56	None[d]	None	None
H-57	921	None	None
H-OS	102 and 901	SI-19	None
N-1[c]	19, 100, and 917(d)	None	None
N-3[c]	Dago Mary's Restaurant (916)	None	None
N-17[c]	101 and 110	None	None
S-46[c]	808 and 821	None	None
S-47	813, 819, and 823	SI-77	S-812
Parcel B[b]			
N-1[c]	None[d]	IR-18	None
N-2	None[d]	IR-07 and IR-18	None
N-3[c]	None[d]	IR-07 and IR-18	None
N-4	103, 104, and 117	IR-62	None
N-5	115, 116, 118(d), and 119(d)	IR-23 and IR-62	S-135 and S-136
N-6	121, 122, and 146	IR-07, IR-23, and IR-61	None
N-7	113, 114 (113A), 114(d), and 120	SI-31 and IR-42	None
N-8	123	IR-10	None
N-9	125, 128, 131, and 159	IR-24	None

TABLE ES-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel B[b] (Continued)			
N-10	109, 111(d), and 112(d), and former Tank Farm	IR-06 and IR-42	None
N-11[c]	124(d)	IR-10 and IR-24	None
N-12	130 and 156	IR-20 and IR-24	None
N-13[c]	None[d]	None	None
N-14[c]	None[d]	IR-26	None
N-15	157 and 163	IR-20 and IR-26	None
N-16	129, 132, 133, 140, 141, 142A(d), and Berths 55 through 58	IR-24 and IR-26	None
N-OS[c]	144, 145, Berths 61 through 64, and Dry Docks 5, 6, and 7	IR-07, IR-23, IR-24, and IR-60	None
Parcel C[b]			
N-11[c]	134	IR-25	None
N-13[c]	None[d]	IR-58	None
N-14[c]	135 and 206	IR-58 and IR-64	None
N-17[c]	None[d]	None	None
N-18	154, 217, 241, 278(d), 279(d), and 280	IR-29, IR-30, and IR-63	None
N-19	258	IR-28	S-219
N-20	214, 251, and 252	IR-28	S-251
N-21	204, 205, 207, and 208 and Dry Docks 2 and 3	IR-27 and IR-64	HPA-06 and S-214
N-22	231	IR-28	None
N-23	203, 215, 275, and 282	IR-29	S-203, S-211, S-212, and S-213
N-24	228, 270, 271, 272, 273, and 281	IR-28	HPA-07, HPA-33, HPA-34, and S-215
N-25	211, 224, and 253	IR-28	HPA-02, HPA-03, HPA-04, HPA-05, S-001, S-002, S-003, and S-004

TABLE ES-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel C[b] (Continued)			
N-26	230 and 236	IR-28 and IR-29	S-209 and S-210
N-OS[c]	218, 219, 225, 226, 229, YYK sheds, and Berths 1 through 5	IR-28	HPA-01, HPA-10, HPA-11, HPA-12, HPA-16, and HPA-17
S-27[c]	234, 300, 301, 367, and Dry Dock 4, South Pier, and Berths 6 through 11	IR-57	None
Parcel D[b]			
S-27[c]	274, 306, 308, 311, 313(d), 313A(d), 368, 369, 370, 372, 374(d), 375(d), 376, 378, 379, 380, 381, 382, 383, 384, 385, and Berths 12 through 21	IR-22, SI-32, IR-35, IR-55, and IR-68	HPA-308
S-28	302, 303 (303A), 304, 363, and 366	IR-33 and IR-34	S-304 and S-305
S-29	402, 417, 418, 419, 420, 421, 422(d), 423(d), and 424	IR-09 and IR-33	None
S-30	401, 404, 435, 436, and 437	IR-37 and IR-66	S-435(1) and S-435 (2)
S-37	407 and 439	IR-66 and IR-67	None
S-38	408, 409, 410(d), 411, and 438 (Welding Enclosure)	IR-33 and IR-44	None
S-39	323, 324, 351, 351A, 364, 365, 415, and 416	IR-33, IR-34, IR-65, and IR-71	None
S-40[c]	500 and 505	IR-38 and IR-39	S-508
S-41[c]	501(d), 502(d), 503(d), and 606	IR-08 and IR-38	None
S-42[c]	508(d)	IR-08, IR-38, and IR-39	None
S-43	307 and S-308	IR-32, IR-55, and IR-70	None
S-OS[c]	523, 525, 526, 527, 530, and Berths 22 through 29	IR-16, IR-17, IR-53, and IR-69	None

TABLE ES-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel E[b]			
S-30[c]	404A	IR-36	None
S-31[c]	400 and 405	IR-36	None
S-32	702(d) and 710	IR-05, IR-12, and IR-36	None
S-33	None[d]	IR-05 and IR-12	None
S-34	None[d]	IR-01/21, IR-02, and IR-12	None
S-35	371, 524(d), 704, 707, 708, and 803(d)	IR-02, IR-13, IR-36, and IR-39	HPA-14, HPA-15, and S-711 through S-715
S-36	406, 413, and 414	IR-36	None
S-40[c]	None[d]	IR-13 and IR-14	None
S-41[c]	506(d), 507(d), and 529(d)	IR-14 and IR-38	None
S-42[c]	512(d) and 517(d)	IR-38	None
S-44	509(d), 510(d), 510A(d), 511(d), 511A(d), 513(d), 514(d), 515(d), 516(d), 518(d), 520(d), 521, and AST S-505	IR-02, IR-11, IR-14, IR-15, IR-38, and IR-54	None
S-45	807(d), 809, 810, and 811	IR-01/21, IR-04, IR-56, and IR-72	S-801 and S-802
S-46[c]	None[d]	None	None
S-OS[c]	527, 600, Berths 30 through 42, and Railroad right-of-way	IR-01/21, IR-02, IR-03, IR-40, IR-52, and IR-73	None
Other Areas			
Parcel F	None	None	None
Other (FUDS)	815, 820, 830, and 831	IR-74, IR-75, and IR-76	None

Notes:

AST Aboveground storage tank
(d) Demolished
FUDS Formerly used defense sites
IR Installation restoration
JAI Jerrold Avenue Investigation

TABLE ES-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Notes (Continued):

SI	Site inspection
UST	Underground storage tank

a Not all buildings and structures may be listed for each subparcel.

b IR-45 (steam lines), IR-47 (fuel distribution lines for AST S-505), IR-49 (fuel distribution lines), IR-50 (Storm Drain and Sanitary Sewer Systems), and IR-51 (former transformer sites) are all basewide investigations and do not appear in this table.

c Subparcel straddles more than one parcel (for example, Parcels A and C).

d Open space

TABLE ES-2

SUBPARCELS BY ECP AREA TYPE CATEGORY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

ECP Area Type Category	Description of ECP Area Type Category[a]	SubParcel Category
Category 1	Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of those substances from adjacent areas)	H-49, H-50, H-51, H-52, H-54, H-55, H-56, H-57, N-17, and S-46
Category 2	Areas where only release or disposal of petroleum products has occurred	None
Category 3	Areas where release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action	N-4
Category 4	Areas where release of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken	H-48, H-53, H-OS, S-37, and S-47
Category 5	Areas where release of hazardous substances has occurred, and removal or remedial actions are under way, but all required remedial actions have not yet been taken	N-5, N-7, N-9, N-10, N-12, and N-16
Category 6	Areas where release of hazardous substances has occurred, but required actions have not yet been implemented	N-1, N-2, N-3, N-6, N-8, N-11, N-13, N-14, N-15, N-18, N-19, N-20, N-21, N-22, N-23, N-24, N-25, N-26, N-OS, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-38, S-39, S-40, S-41, S-42, S-43, S-44, S-45, S-OS, and Parcel F
Category 7	Areas that are not evaluated or require additional evaluation	None

Notes:

ECP Environmental condition of property

a ECP category classifications were redefined in U.S. Department of Defense "Addendum to the BRAC Cleanup Guidebook" published in September 1996.

CHAPTER 1

INTRODUCTION

This basewide environmental baseline survey (EBS) report summarizes environmental information gathered by Tetra Tech EM Inc. (TtEMI) for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC), Engineering Field Activity West (EFA West), at Hunters Point Shipyard (HPS), San Francisco, California. This document is based on existing environmental information related to the storage, release, treatment, and disposal of hazardous substances or petroleum products at HPS. The environmental information in this report was gathered from May to December 1995 and September to November 1997. Figure 1-1 shows the geographic location of HPS (figures are located at the end of each chapter). Figure 1-2, depicts the area for which a records search and review was conducted for the purposes of this report (the survey area). The survey area consists of the installation itself and the area outside of HPS within a 1-mile radius from the HPS boundary.

This basewide EBS was prepared in consultation with the Navy's compliance program and Installation Restoration Program (IRP) engineers-in-charge, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC), reuse specialists and remedial project managers from the U.S. Environmental Protection Agency (EPA) and the California Department of Toxic Substances Control (DTSC), managers from the City of San Francisco and the San Francisco Redevelopment Agency (SFRA), and other Navy consultants.

1.1 PURPOSE AND SCOPE OF ENVIRONMENTAL BASELINE SURVEY

The main purpose of the basewide EBS is to aid in the implementation of President Clinton's July 2, 1993 decision to expedite and improve environmental response actions at and facilitate the transfer and reuse of U.S. Department of Defense (DoD) properties. This basewide EBS fulfills requirements of Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Community Environmental Response Facilitation Act of 1992 (CERFA). The HPS basewide EBS provides environmental and related data to (1) compile environmental data and findings in text and in a relational database, to be continually updated; (2) identify CERFA-clean parcels; (3) support conclusions that portions or subparcels of the base, although not CERFA-clean, are in such a condition that the Navy may issue deeds to transfer the property on the basis that "no remedial action is required"; (4) classify the facility property according to environmental condition of property (ECP) classification categories as discussed under "Property Classification," Section 2.8 of this report; (5) facilitate reuse

decisions; and (6) provide information about subparcels that may require further investigation or response actions.

The original scope of work for this report requested basing the basewide EBS on the HPS baseline environmental report (BER) (Tetra Tech, Inc. [Tetra Tech] 1994) and the NAVFAC "Environmental Baseline Survey Guidance" (NAVFAC 1995). The BER, a preliminary compilation of information for the environmental documentation process set forth in the National Environmental Policy Act (NEPA), created 97 subparcels defined by common environmental features and issues to represent the existing environmental character of HPS. The BER is current up through 1993 only.

During a scoping meeting, the regulatory agencies agreed that HPS should be divided into subparcels in accordance with the reuse subparcels defined by the City of San Francisco, which is designated as the eventual owner of the property. Figure 1-3 shows the 60 subparcels according to the City and County of San Francisco Planning Department (CCSFPD).

This document integrates current environmental information regarding environmental compliance, installation restoration (IR), and property reuse programs for HPS. Under the IRP, in 1992 HPS was divided into five contiguous geographic "parcels," A through E, which follows the proposed cleanup sequence of Parcels A, B, C, D, and E. In 1995, the submerged tidal and intertidal lands of HPS, approximately 443 acres below the waters of San Francisco Bay, were designated as Parcel F. In addition, within each IRP "parcel," numerous sites are contaminated (IR sites) or require an assessment or inspection (site assessment [SA] or site inspection [SI] sites). In this report, land units designated according to the reuse plan are referred to as "subparcels" followed by the designation number given by the CCSFPD; land units investigated under the IRP are referred to as "parcels" (A through F, as appropriate). Whenever possible, subparcels, parcels, and IR and SI sites will be cross-referenced in this report. Table 1-1 provides a cross-reference for the subparcels, parcels, and the IR and SI sites.

TtEMI used the following general scope of work to prepare the basewide EBS Revision 00:

- Review available information and records in the possession of the DoD components
- Perform a visual site inspection (VSI) of the property
- Review recorded chain-of-title documents, focusing on ownership history of the property that may have had an environmental impact
- Analyze aerial photographs that may reflect prior uses of the property

- Interview current and former employees and tenants of the facility
- Perform a VSI of non-Navy property adjacent to HPS that may have an environmental impact on HPS
- Compile all the subparcel information gathered during the EBS into a relational database

TtEMI used the following approach to prepare the basewide EBS Revision 01:

- Survey tenants leasing buildings and areas from the Navy (Navy tenants) to collect data on disposal, storage, or release of hazardous materials at HPS buildings
- Update the EBS compliance database with current HPS information on asbestos, polychlorinated biphenyl (PCB) equipment, hazardous materials, aboveground storage tanks (AST) and underground storage tanks (UST), IRP sites, land use, and other data appropriate to current conditions at HPS
- Update text, figures, and tables to reflect current conditions at HPS

The HPS basewide EBS, the HPS basewide finding of suitability to lease (FOSL) (TtEMI 1998a), and the BRAC Cleanup Plan (BCP) (PRC Environmental Management, Inc. [PRC] 1997b) should be considered companion documents that contain overlapping information. In 1992, the Navy decided to forego the preparation of a basewide EBS for HPS because it believed that only 5 percent of the HPS land area would be classified as CERFA-clean; however, as more interim and long-term reuse leases were contemplated by the City of San Francisco, the lack of a basewide EBS was becoming a roadblock for an expeditious lease and transfer process at HPS. The HPS BCP Revision 03, updated March 1997 (PRC 1997b), is considered the roadmap for the development and selection of remedial actions that will reduce environmental risk in a manner consistent with statutory requirements. The BCP was developed to provide a management tool for the BRAC Cleanup Team (BCT) and concerned parties for planning environmental restoration and compliance activities at HPS. The BCP reflects a comprehensive, bottom-up program review prepared in consultation with the BCT to facilitate the return of HPS property to the community for beneficial use. The basewide EBS should be considered the backbone that provides supporting information needed to identify (1) areas that are suitable for transfer by deed, (2) areas that are suitable for reuse if appropriate restrictions and requirements are put in place, and (3) areas that are unsuitable for transfer or immediate reuse.

The basewide FOSL (TtEMI 1998a) and the Parcel A finding of suitability to transfer (FOST) (PRC 1996c) documents should be considered the rulebooks to guide the transfer of HPS to the City of

San Francisco. The basewide FOSL, Parcel A FOST, and other HPS site-specific FOSLs and FOSTs are the culmination of all investigations performed and reports written for HPS. FOSLs and FOSTs evaluate the existing on-site environmental conditions for reuse. They identify the necessary restrictions and notifications in order to lease and transfer land.

1.2 ORGANIZATION AND FEATURES OF ENVIRONMENTAL BASELINE SURVEY

This section briefly describes the organization and features of this basewide EBS.

1.2.1 Organization

In March 1995, the Navy published a guideline titled "Environmental Baseline Survey Guidance" (NAVFAC 1995), which provides a brief yet comprehensive explanation of the EBS process. It also establishes a mandatory EBS report format to help the Navy with its efforts to standardize this complex process. This basewide EBS is organized according to the mandatory format guidelines set forth in the guidance document. The report is contained in two volumes, described in the following subsections.

1.2.1.1 Volume 1

Volume 1 contains Chapters 1 through 7 and Appendices A through G.

- Chapter 1 contains the introduction and background, describes the document organization, discusses the physical boundaries of the property that is the subject of this EBS, and presents the 1994 aerial photograph of the facility, as shown on Figure 1-4.
- Chapter 2 details the survey methodology and presents the technical approach and rationale for the 1995 VSIs, program review, document review, interviews, title search, database implementation, property classification, and the 1997 tenant survey.
- Chapter 3 describes the site history and past and current operations.
- Chapter 4 discusses the environmental setting of HPS, including the physical description, natural resources, utilities, and transportation resources.
- Chapter 5 details the EBS findings for base property, including findings from the program review (compliance program and IRP), interviews, aerial photography analysis, and title search.

- Chapter 6 details the EBS findings at adjacent properties, including findings of the records search, visual and physical inspections, and conclusions regarding possible off-site migration contamination to or from HPS.

- Chapter 7 presents the EBS conclusions, including property classifications, CERFA-clean properties, data gaps affecting property classification, and areas identified for further review.

Appendix A is an example of the 1995 VSI questionnaire and the 1997 tenant survey questionnaire used to gather information on the present condition of the subparcel property; Appendix B contains the findings of the interviews conducted for the 1995 VSIs and the 1997 tenant survey; Appendix C contains the backup documentation for the aerial photograph analysis; Appendix D contains supporting documentation gathered during the title search; Appendix E contains supporting documentation gathered during the records search and visual and physical inspections of adjacent properties; Appendix F contains the enforceable schedules for the remedial investigation (RI) and feasibility study (FS) reports and records of decision (ROD) for Parcels B through F; Appendix G contains the IRP site descriptions; and Appendix H contains the building-specific hazardous materials stored, disposed, or released at Navy tenant buildings (1997 tenant survey results).

1.2.1.2 Volume 2

Volume 2 contains a printout of the database for all the subparcel units and the rationale and supporting information for the property classifications. The presentation format was discussed during the basewide EBS scoping meeting and was modified, taking into consideration input from EPA and the DTSC's reuse specialists and remedial project managers.

1.2.2 Features

A list of commonly used abbreviations and acronyms and a glossary of terms precedes the executive summary and immediately follows the table of contents. Tables and figures follow the chapter in which they are cited. The tables appear first, followed by the figures. Many documents and other information sources are cited in the text and tables; a list of references follows Chapter 7.

Revision 03 of the HPS BCP (PRC 1997b) contains clear film overlays showing specific information, such as the locations of the IRP sites, buildings currently used, and other environmentally relevant information. These overlays were designed so that they could be removed from the report's binding and overlaid on the master site map. The same master site map (see Figure 1-5) is included in this report,

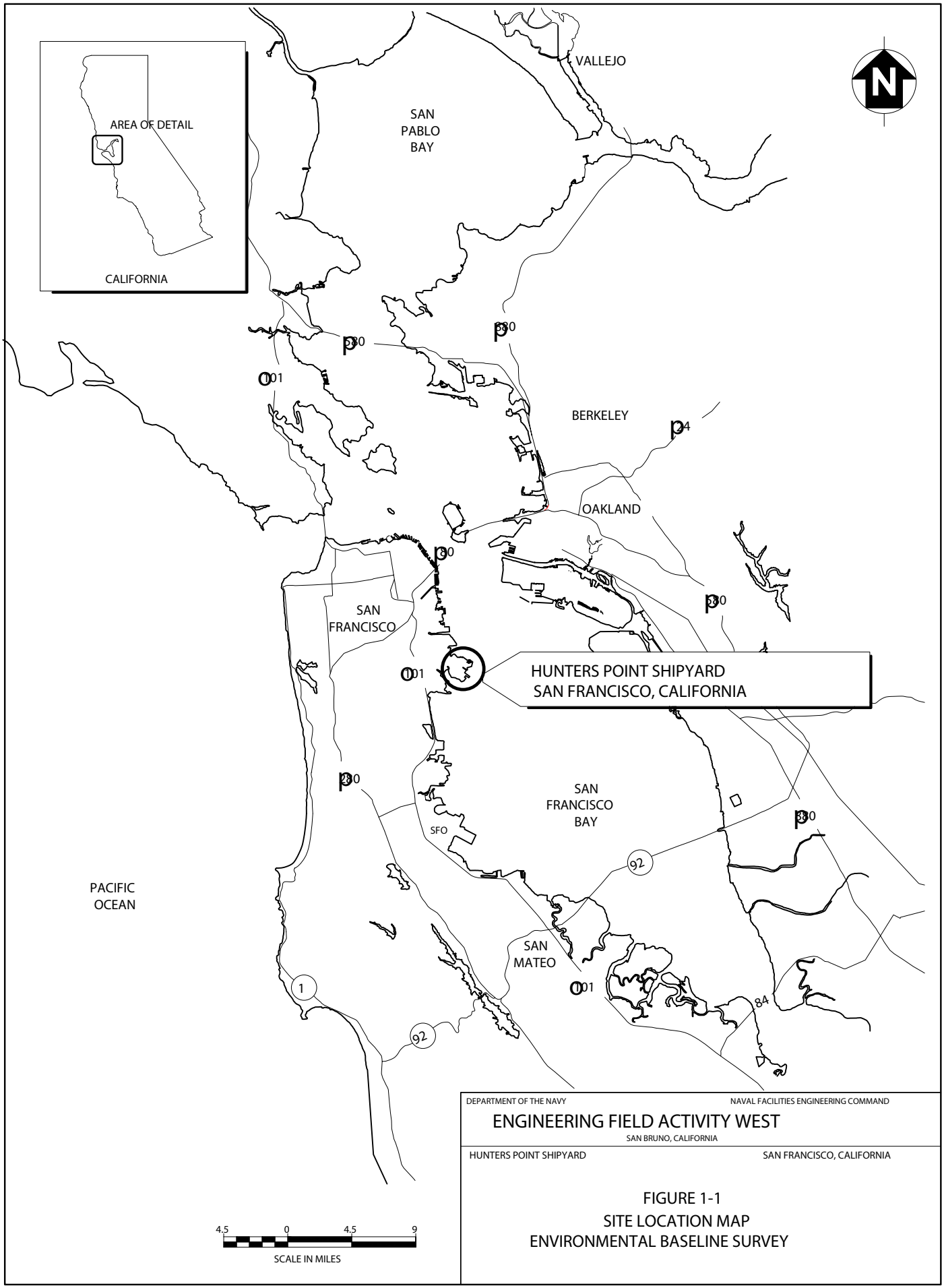
along with five overlays depicting (1) the IRP and UST sites, (2) the HPS habitat, (3) the ECP classification for the reuse subparcels, (4) the approved reuse plan showing the intended future use of the property, and (5) extended IRP site boundaries.

EFA West recognizes that a basewide EBS is a tool for the integration of environmental cleanup, compliance, and reuse programs. An important feature of the HPS basewide EBS is the concurrent preparation of a relational database that stores environmental information previously gathered Navy environmental consultants, and information on the current site conditions gathered during the EBS process. This database will be updated periodically as new information becomes available or site conditions change. It is expected that the HPS database will be a useful resource to the IRP, Navy's compliance and real estate managers, reuse specialists, and CCSF agencies involved with the transfer and development of HPS.

1.3 BOUNDARIES OF PROPERTY AND GENERAL DESCRIPTION

HPS is on a long promontory in the southeast corner of San Francisco, extending eastward into San Francisco Bay, as shown on Figure 1-1. The facility is bounded on the north and east by the Bay, and on the south and west by the Bayview/Hunters Point district of San Francisco. Figure 1-2 shows the property boundaries. The on-base property consists of 936.37 acres, of which 493 acres is on land and 443 acres is below the waters of the Bay (EFA West 1994). HPS property also includes a 3.39-acre off-base property, the railroad right-of-way, which is approximately 3,200 feet long and 30 feet wide and extends off site to the west of HPS along Crisp Avenue. The survey area for the EBS consisted of the on-base property and adjacent properties outside HPS and within a 1-mile radius from the property boundary. An aerial photograph of the site taken in 1994 is included as Figure 1-4.

The geographic location and waterfront characteristics of HPS are favorable for shipyard and general maritime operations. The protected harbor afforded by the San Francisco Bay provides an unrestricted approach channel with relatively deep water and a large anchorage off the shipyard (Environmental Science Associates [ESA] 1987). The site history and the environmental setting of HPS are presented in Chapters 3 and 4, respectively.



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

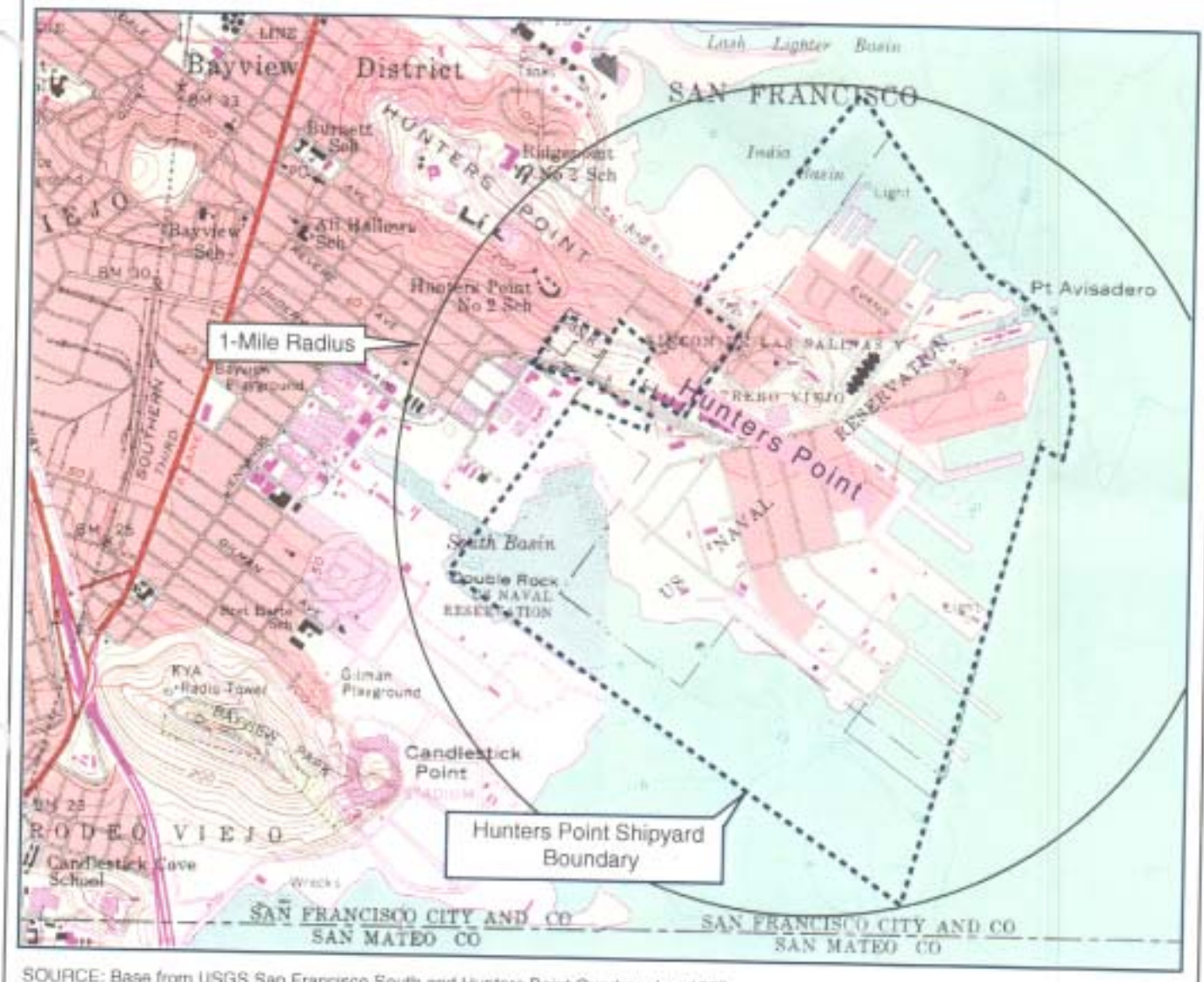
HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 1-1

SITE LOCATION MAP

ENVIRONMENTAL BASELINE SURVEY

3/16/98 DN VEC O:\HUNTER\EBS\HPMAP.DWG



SOURCE: Base from USGS San Francisco South and Hunters Point Quadranglas, 1980.
Revisions shown in purple compiled from aerial photographs taken in 1968 and 1973.

N

0 500 1000

SCALE IN FEET

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

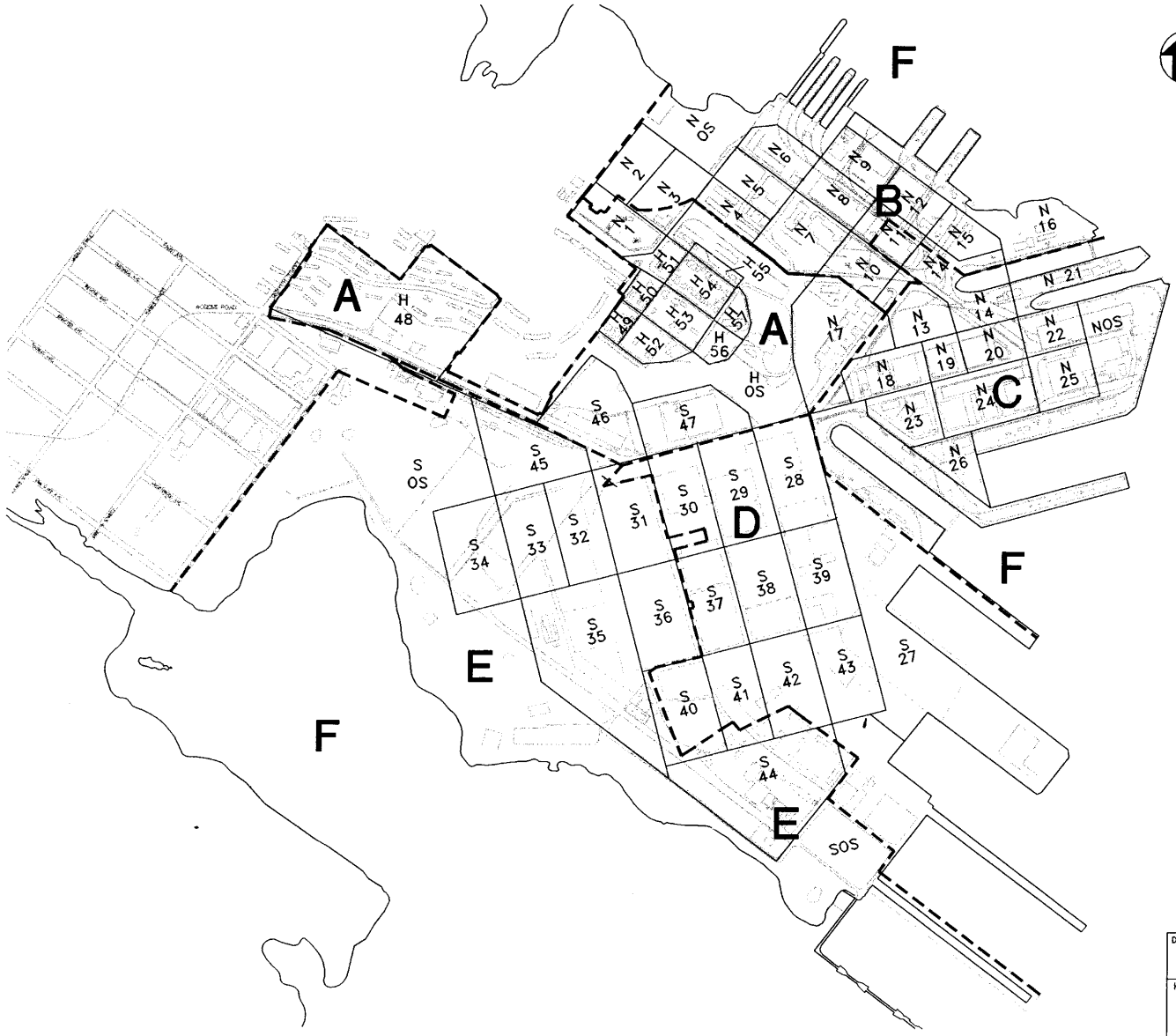
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 1-2

AREA SURVEY
ENVIRONMENTAL BASELINE SURVEY



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ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 1-3

HPS SUBPARCEL UNITS

ENVIRONMENTAL BASELINE SURVEY

4/13/98 JEC O:\HUNTERS\EBS\REUSE1.DWG

0 500 1000 2000

APPROXIMATE SCALE IN FEET

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

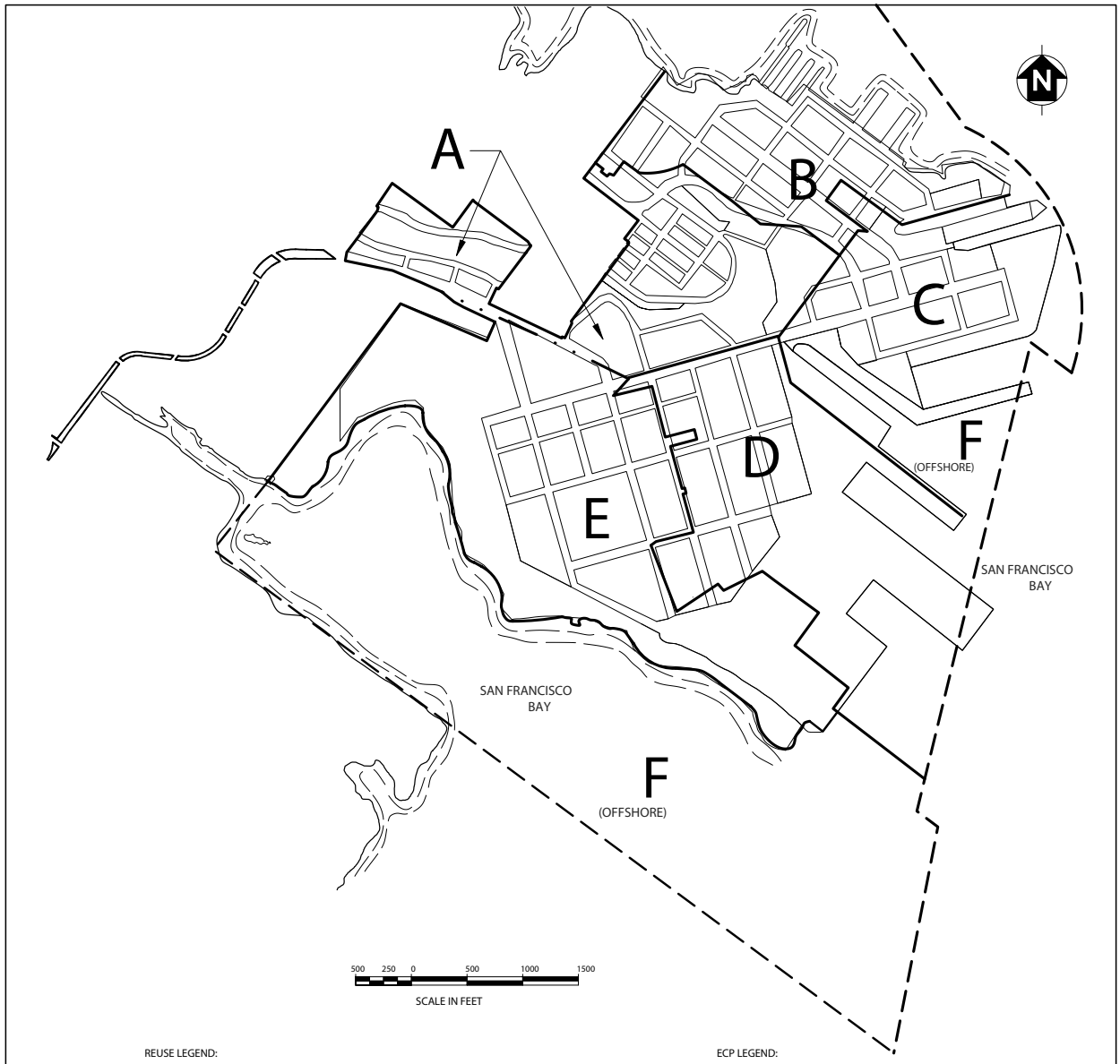
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD SAN FRANCISCO, CALIFORNIA

FIGURE 1-4
AERIAL PHOTO, 1994
ENVIRONMENTAL BASELINE SURVEY

DATE: 03/26/99 DN FILE NAME: 069\012M\02\AERIAL1.DSF



REUSE LEGEND:

- CULTURAL & EDUCATIONAL
- INDUSTRIAL
- RESEARCH & DEVELOPMENT
- OPEN SPACE
  - P PASSIVE
  - A ACTIVE
  - H HARD SURFACES
  - W POSSIBLE WETLAND RESTORATION
- RESIDENTIAL
- MARITIME INDUSTRIAL
- MIXED USE (RETAIL/GALLERY, ARTISAN STUDIO, ARTIST LIVE/WORK, WAREHOUSE, HOTEL/CONFERENCE)
- PARCEL BOUNDARY

ECP LEGEND:

- ECP CATEGORY 1
- ECP CATEGORY 3
- ECP CATEGORY 4
- ECP CATEGORY 5
- ECP CATEGORY 6

HABITAT LEGEND:

- RUDERAL
- NON-NATIVE GRASSLAND
- LANDSCAPE
- MUDFLATS (INTERTIDAL)
- INDUSTRIAL
- WETLAND

EXTENDED IR SITES LEGEND:

- EXTENED IR SITE BOUNDARY
- IR-32 IR SITE NUMBER

IR AND SI SITES, AND UST LEGEND:

- UNDERGROUND STORAGE TANK
- IR SITES BOUNDARY
- SI SITES BOUNDARY

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST
SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 1-5
SITE MAP
ENVIRONMENTAL BASELINE SURVEY

3/2/98 DN VEC O:\HUNTERS\FIGURE1-5.DWG

TABLE 1-1

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel A[b]			
H-48	816, 817A, and 818	SI-41	None
H-49	Residential units	None	None
H-50	Residential units	None	None
H-51	158, 322, and 915	None	None
H-52	Residential units	None	None
H-53	906, residential units, and water tank	IR-59 JAI and SI-43	None
H-54	Residential units	None	None
H-55	908 and residential units	None	None
H-56	None[d]	None	None
H-57	921	None	None
H-OS	102 and 901	SI-19	None
N-1[c]	19, 100, and 917(d)	None	None
N-3[c]	Dago Mary's Restaurant (916)	None	None
N-17[c]	101 and 110	None	None
S-46[c]	808 and 821	None	None
S-47	813, 819, and 823	SI-77	S-812
Parcel B[b]			
N-1[c]	None[d]	IR-18	None
N-2	None[d]	IR-07 and IR-18	None
N-3[c]	None[d]	IR-07 and IR-18	None
N-4	103, 104, and 117	IR-62	None
N-5	115, 116, 118(d), and 119(d)	IR-23 and IR-62	S-135 and S-136
N-6	121, 122, and 146	IR-07, IR-23, and IR-61	None
N-7	113, 114 (113A), 114(d), and 120	SI-31 and IR-42	None
N-8	123	IR-10	None
N-9	125, 128, 131, and 159	IR-24	None

TABLE 1-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel B[b] (Continued)			
N-10	109, 111(d), and 112(d), and former Tank Farm	IR-06 and IR-42	None
N-11[c]	124(d)	IR-10 and IR-24	None
N-12	130 and 156	IR-20 and IR-24	None
N-13[c]	None[d]	None	None
N-14[c]	None[d]	IR-26	None
N-15	157 and 163	IR-20 and IR-26	None
N-16	129, 132, 133, 140, 141, 142A(d), and Berths 55 through 58	IR-24 and IR-26	None
N-OS[c]	144, 145, Berths 61 through 64, and Dry Docks 5, 6, and 7	IR-07, IR-23, IR-24, and IR-60	None
Parcel C[b]			
N-11[c]	134	IR-25	None
N-13[c]	None[d]	IR-58	None
N-14[c]	135 and 206	IR-58 and IR-64	None
N-17[c]	None[d]	None	None
N-18	154, 217, 241, 278(d), 279(d), and 280	IR-29, IR-30, and IR-63	None
N-19	258	IR-28	S-219
N-20	214, 251, and 252	IR-28	S-251
N-21	204, 205, 207, and 208 and Dry Docks 2 and 3	IR-27 and IR-64	HPA-06 and S-214
N-22	231	IR-28	None
N-23	203, 215, 275, and 282	IR-29	S-203, S-211, S-212, and S-213
N-24	228, 270, 271, 272, 273, and 281	IR-28	HPA-07, HPA-33, HPA-34, and S-215
N-25	211, 224, and 253	IR-28	HPA-02, HPA-03, HPA-04, HPA-05, S-001, S-002, S-003, and S-004

TABLE 1-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel C[b] (Continued)			
N-26	230 and 236	IR-28 and IR-29	S-209 and S-210
N-OS[c]	218, 219, 225, 226, 229, YYK sheds, and Berths 1 through 5	IR-28	HPA-01, HPA-10, HPA-11, HPA-12, HPA-16, and HPA-17
S-27[c]	234, 300, 301, 367, and Dry Dock 4, South Pier, and Berths 6 through 11	IR-57	None
Parcel D[b]			
S-27[c]	274, 306, 308, 311, 313(d), 313A(d), 368, 369, 370, 372, 374(d), 375(d), 376, 378, 379, 380, 381, 382, 383, 384, 385, and Berths 12 through 21	IR-22, SI-32, IR-35, IR-55, and IR-68	HPA-308
S-28	302, 303 (303A), 304, 363, and 366	IR-33 and IR-34	S-304 and S-305
S-29	402, 417, 418, 419, 420, 421, 422(d), 423(d), and 424	IR-09 and IR-33	None
S-30	401, 404, 435, 436, and 437	IR-37 and IR-66	S-435(1) and S-435 (2)
S-37	407 and 439	IR-66 and IR-67	None
S-38	408, 409, 410(d), 411, and 438 (Welding Enclosure)	IR-33 and IR-44	None
S-39	323, 324, 351, 351A, 364, 365, 415, and 416	IR-33, IR-34, IR-65, and IR-71	None
S-40[c]	500 and 505	IR-38 and IR-39	S-508
S-41[c]	501(d), 502(d), 503(d), and 606	IR-08 and IR-38	None
S-42[c]	508(d)	IR-08, IR-38, and IR-39	None
S-43	307 and S-308	IR-32, IR-55, and IR-70	None
S-OS[c]	523, 525, 526, 527, 530, and Berths 22 through 29	IR-16, IR-17, IR-53, and IR-69	None

TABLE 1-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Sub-Parcel	Building Numbers and Other Structures[a]	IR/SI Site(s)	UST(s)
Parcel E[b]			
S-30[c]	404A	IR-36	None
S-31[c]	400 and 405	IR-36	None
S-32	702(d) and 710	IR-05, IR-12, and IR-36	None
S-33	None[d]	IR-05 and IR-12	None
S-34	None[d]	IR-01/21, IR-02, and IR-12	None
S-35	371, 524(d), 704, 707, 708, and 803(d)	IR-02, IR-13, IR-36, and IR-39	HPA-14, HPA-15, and S-711 through S-715
S-36	406, 413, and 414	IR-36	None
S-40[c]	None[d]	IR-13 and IR-14	None
S-41[c]	506(d), 507(d), and 529(d)	IR-14 and IR-38	None
S-42[c]	512(d) and 517(d)	IR-38	None
S-44	509(d), 510(d), 510A(d), 511(d), 511A(d), 513(d), 514(d), 515(d), 516(d), 518(d), 520(d), 521, and AST S-505	IR-02, IR-11, IR-14, IR-15, IR-38, and IR-54	None
S-45	807(d), 809, 810, and 811	IR-01/21, IR-04, IR-56, and IR-72	S-801 and S-802
S-46[c]	None[d]	None	None
S-OS[c]	527, 600, Berths 30 through 42, and Railroad right-of-way	IR-01/21, IR-02, IR-03, IR-40, IR-52, and IR-73	None
Other Areas			
Parcel F	None	None	None
Other (FUDS)	815, 820, 830, and 831	IR-74, IR-75, and IR-76	None

Notes:

AST Aboveground storage tank
(d) Demolished
FUDS Formerly used defense sites
IR Installation restoration
JAI Jerrold Avenue Investigation

TABLE 1-1 (Continued)

SUBPARCEL CROSS-REFERENCE LIST
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Notes (Continued):

SI	Site inspection
UST	Underground storage tank

a Not all buildings and structures may be listed for each subparcel.

b IR-45 (steam lines), IR-47 (fuel distribution lines for AST S-505), IR-49 (fuel distribution lines), IR-50 (Storm Drain and Sanitary Sewer Systems), and IR-51 (former transformer sites) are all basewide investigations and do not appear in this table.

c Subparcel straddles more than one parcel (for example, Parcels A and C).

d Open space

CHAPTER 2

SURVEY METHODOLOGY

This chapter describes the survey methodologies, technical approach, and rationale for the basewide EBS, including the methods used to perform the 1995 VSI, review environmental programs, conduct interviews, perform a title search, perform the database implementation, perform the 1997 tenant survey, and classify the HPS subparcels into DoD categories.

2.1 APPROACH AND RATIONALE

The basewide EBS applied a systematic approach to evaluate and describe environmental conditions at HPS. The data gathered were used to classify subparcels and buildings according to the DoD "Standard Classification of Environmental Condition of Property Area Types." The data and property classifications presented in this EBS can be used to facilitate preparation of site-specific EBS (SSEBS), FOST, and FOSL reports for HPS parcels, subparcels, and/or specific buildings. These reports can then be used to develop documents for the lease or transfer of real property from the Navy to the City of San Francisco or another deed holder or tenant.

The basewide EBS focuses on the environmental conditions related to hazardous materials, hazardous wastes, and petroleum products at HPS. The environmental information evaluated was obtained from reports prepared under the IRP and 1995 VSI reports prepared under the HPS compliance programs, aerial photographs, review of documents regarding off-site property, and results of the 1997 tenant survey. Cultural and natural resources were evaluated based on their impacts on characterization, remediation, and reuse of property.

Data collection and evaluation methodologies for each major element of the EBS in the following:

- 1995 VSI (Section 2.2)
- HPS IRP and compliance program review (Section 2.3)
- Document review (Section 2.4)
- Interviews (Section 2.5)
- Title document review (Section 2.6)

- Aerial photograph review (Section 2.7)
- 1997 tenant survey (Section 2.8)
- Property classification (Section 2.9)
- Data management (Section 2.10)

2.2 1995 VISUAL SITE INSPECTIONS

In 1995, VSIs were performed to update and corroborate the information presented in the BER (Tetra Tech 1994), and to identify or confirm evidence of spills or contamination. The BER, current through 1993, identified 97 subparcel units at HPS. It was assumed that all the information gathered in the BER for the buildings and real property in these 97 subparcels required corroboration through the 1995 VSI. In August 1995, the SFRA adopted the subparcel designation presented in Figure 1-3, which consists of 60 subparcel units.

2.2.1 1995 Visual Site Inspection Methodology

The approach and methodology for conducting the 1995 VSI included the following:

- Obtaining access to open spaces and buildings
- Observing recommended health and safety precautions
- Performing the visual survey
- Taking photographs to document the survey
- Interviewing tenants or Navy personnel when available

The approach outlined above was followed for each 1995 VSI SFRA-designated subparcel. The 1995 VSIs were performed between August 21 and October 5, 1995. Access to buildings and open spaces was coordinated with HPS caretaker and fire department personnel. Photographs were taken to document items of environmental concern and the general condition of an area. Many of the areas inspected were unoccupied. Interviews for these areas were limited to HPS security personnel. When available, tenants or Navy representatives were interviewed regarding occupied areas.

2.2.2 1995 Visual Site Inspection Scope of Work

The scope of work for the 1995 VSI involved the nonintrusive inspection of buildings, structures, equipment, pipes, pipelines where visible, and other improvements on the real property, as well as properties immediately adjacent to each subparcel. Where possible, 1995 VSI observations included sewer lines, runoff patterns, and evidence of environmental impacts (such as stressed vegetation, stained soils, and dead or ill wildlife). The 1995 VSI also included any other observations that indicated actual or potential releases of hazardous substances or petroleum products.

With regard to the general site setting at each subparcel, specific items identified during the 1995 VSIs included the following:

- Current use(s) of the property, including buildings, open space, or other structures in the subparcel
- Past uses of the property, to the extent possible (for example, in some cases there are signs of past use such as building foundations or asphalt patches)
- Geologic, hydrogeologic, hydrologic, and topographic conditions to determine if hazardous substances are likely to migrate to or off the property or into groundwater or soil
- General description of structures in the subparcel, noting the number of buildings, number of stories in each building, and ancillary structures
- Thoroughfares on or adjoining the subparcel including roads, streets, railroads, and parking lots
- Source of the potable water supply
- Sewage disposal system and storm drain system
- Access vaults on the subparcel
- The presence of gas, electric, steam, and fuel lines
- Hazardous materials and petroleum products, including the approximate quantities, types of containers, and the conditions of hazardous waste or materials storage, and accumulation areas
- Storage tanks, both above and below ground; vent pipes, fill pipes, or access ways indicating possible storage of hazardous materials
- Odors, specifically strong, pungent, or noxious

- Pools of liquids, such as standing surface water (other than common rain puddles)
- Pits or sumps containing liquids likely to be hazardous substances or petroleum products
- Drums, such as 55-gallon drums, whether leaking or not; small containers, including unidentified substance containers, such as 5-gallon cans
- Electrical and hydraulic equipment, or any other type of equipment known or suspected to contain PCBs or other hazardous materials
- Storage or accumulation of radioactive materials, investigation-derived waste (IDW), ordnance, oil-water separators, or waste piles

The 1995 VSIs included identification of the following specific items with regard to the interior of buildings:

- Heating and cooling systems for each building, including the fuel source, if possible
- Stains or corrosion on floors (due to spills or improper disposal), walls, ceilings, sinks, or drains (except staining from water)
- Floor drains and sumps where a release or suspected release occurred

The 1995 VSIs included identification of the following specific items with regard to the exterior of buildings:

- Pits, ponds, or lagoons, especially in connection with waste disposal or waste treatment
- Stained soil or pavement or stressed vegetation not due to insufficient irrigation
- Wastewater or other liquid, including storm water or any discharge into a drain, ditch, or stream on or adjacent to the subparcel
- Solid waste areas that appeared to be filled or graded by nonnatural causes (or filled with fill of unknown origin), suggesting trash or other solid waste disposal piles, mounds, or depressions
- Wells, including dry wells, irrigation wells, injection wells, abandoned wells, or other wells, to the extent visually or physically apparent
- Septic systems and indications of on-site septic systems or cesspools
- Oil-water separators

2.2.3 Documentation

A 1995 VSI report was prepared for each subparcel unit. The 1995 VSI report was recorded on a checklist in a specified electronic database spreadsheet format developed specifically for the 1995 VSI. Volume 2 contains a summary of the information gathered during the preparation of this document on a subparcel basis. An example of the 1995 VSI questionnaire is presented in Appendix A of this EBS report. The deliverables for the 1995 VSI were as follows:

- 1995 VSI subparcel database spreadsheets for each subparcel
- Documentation of unusual observations (observations of items or conditions not covered in spreadsheets), provided in the comments section of the database spreadsheet
- Photographs; these photographs are not included in this report, but are available upon request

2.3 PROGRAM REVIEW

Existing documents and Navy personnel were consulted to determine the current status of environmental programs at HPS. Both the ongoing environmental compliance programs and the IRP were addressed to develop a comprehensive overview of the past and current environmental status of the HPS property. The following compliance program and IRP elements were evaluated during the basewide EBS program review:

- ASTs and USTs
- Hazardous materials and hazardous waste management
- Solid waste management
- PCBs
- Asbestos
- Radon
- Resource Conservation and Recovery Act (RCRA) facilities
- National Pollutant Discharge Elimination System (NPDES) permits
- Oil-water separators and sumps

- Lead-based paint (LBP)
- Air pollution
- Noise control
- Ordnance
- Radiological issues

The findings of the program review are presented in Chapter 5, the appendices, and Volume 2 of this EBS report.

2.4 DOCUMENT REVIEW

Documents containing information on the storage, release, treatment, or disposal of hazardous substances and petroleum products at HPS were reviewed. Specific documents reviewed included reports under the compliance program and IRP. Historical documents for HPS were generally unavailable.

A large body of data exists regarding the nature, location, and extent of hazardous substance storage, release, treatment, and disposal at HPS. Chapter 5 presents the current status of the IRP and available resources for obtaining additional information. Detailed information on environmental sampling and analytical results is available in an IRP database for HPS developed and compiled by TtEMI. Table 2-1, which follows the text of this chapter, contains a chronological list of HPS environmental reports, which date from 1972.

2.5 INTERVIEWS

Interviews were conducted to the extent possible as part of the 1995 VSI process. Many of the areas inspected were unoccupied, limiting the available subjects for on-site interviews to HPS security personnel. When available, tenants or Navy representatives were interviewed for occupied areas. Most interviews were informal and held without prior arrangements. The 1995 VSI team spoke only with the people present during the 1995 VSI survey. Interviews were scheduled for three subparcels. The interview subjects at these subparcels offered considerable information regarding their subparcels or buildings. The 1995 VSI interviews for HPS are limited, since the facility has been inactive since 1974. Information regarding HPS during the time when it was an active military installation consists of recollections of events that took place more than 20 years ago. Information obtained from interviews

regarding current use is perhaps more reliable, but is limited to buildings currently being leased. Appendix B contains the interview information gained during the 1995 VSI for this basewide EBS.

A series of interviews were conducted as part of a 1984 report prepared by the Naval Energy and Environmental Support Activity (NEESA). Current occupants and past HPS employees were interviewed. Although conducted 10 years after the facility closed, the NEESA interviews provide a first-hand perspective of operations at HPS (NEESA 1984).

2.6 TITLE DOCUMENT REVIEW

The Navy obtained title to the HPS property in 36 separate acquisitions, primarily during the 1940s and 1950s. Each acquisition involved numerous county parcels. In 1958, the District Public Works Office (DPW) issued a report summarizing the title history of the first 13 acquisitions (DPW 1958). The report noted that the legal instruments of title comprised hundreds of documents that totaled several thousand pages. It further noted that the land transactions affected approximately 1,000 individual property owners and included 20 condemnation cases, 29 direct purchases, and four transfers from other government agencies. As a result of the complexity of the HPS chain-of-title, a complete title search was deemed infeasible for the purposes of the basewide EBS. As an alternative to a formal title search, the EBS effort pursued historical documents that would identify businesses that were present in the HPS area prior to the government acquisition of the property. The search focused on businesses whose operations may have had an environmental impact on the property.

The following city, state, and federal records offices were queried or searched for relevant title or environmental information:

- San Francisco Assessors Office
- San Francisco Recorders Office
- San Francisco Fire Department (SFFD)
- San Francisco Health Department, Hazardous Material Section
- San Francisco Department of Public Works (SFDPW)
- San Francisco Building Department
- State Land Commissioners Office, Sacramento

- U.S. District Court, Northern District, San Francisco
- U.S. District Attorney's Office, San Francisco
- Federal Record Center, San Bruno
- Federal Archives, San Bruno

Although assessor's maps would have provided the locations of businesses and property improvements, maps from the pre-Navy period (that is, 1958 or earlier) could not be located. The San Francisco Assessors Office apparently disposed of these records. None of the sources contacted maintain records of industrial activities from the pre-World War II era. No documentation of industrial waste generation, storage, discharge, or disposal could be obtained.

The title company used by the Navy in 1958, California Pacific Title Insurance, is no longer in business, and no successor could be identified. Several other title companies that were in business at that time were contacted, but none of them possessed old assessor maps or other relevant information. In addition, the following local libraries, which maintain San Francisco historical records, were consulted for any available supplemental information:

- San Francisco Public Library, History Room
- California Historical Society Library, San Francisco
- San Francisco State University Library, San Francisco
- Bancroft Library, University of California, Berkeley

Ultimately, only a few historical resources proved to contain any useful information. In addition to the DPW report (1958), NAVFAC had compiled information in tabular and map forms showing current HPS holdings and how they were acquired. The U.S. District Court records for most of the acquisitions were located. These documents contain lists of the property owners and the sums they were paid for their land. A group of title reports for parcels comprising the thirteenth acquisition were also found. In addition to the property description, the reports identified all of the owners and any lessees.

Perhaps the most useful information obtained was extracted from fire insurance maps prepared by the Sanborn Map Company. The major limitation of the Sanborn maps was that they were not frequently updated, and the map coverage of HPS prior to the Navy acquisition was poor, apparently due to the very

limited industrial development in the area. Some business information was cross-checked through various telephone directories of the 1940s.

The results of the title document review are presented in Section 5.6. Supporting documentation gathered during the title search is presented in Appendix D of this EBS report.

2.7 AERIAL PHOTOGRAPH REVIEW

Aerial photographs were reviewed at HPS in 1995 to evaluate whether or not areas of concern (AOC) could be identified using sterioscopic techniques. The HPS aerial photography was used to identify stains, drums, ASTs, debris areas, construction areas, apparent fill or mounded areas, and disturbed soil. Aerial photographs of HPS taken in 1935, 1946, 1969, 1985, and 1994 were reviewed and support documentation from the review are contained in Appendix C of this report (Harding Lawson Associates [HLA] 1995a). Section 6.2 also contains additional information on the aerial photograph review.

2.8 1997 TENANT SURVEY

A hazardous materials survey of Navy building tenants was performed to collect the following data on Navy tenant activities:

- Hazardous materials equal to or in excess quantities of 1,000 kilograms stored, released, or disposed of for 1 year or more
- Hazardous materials equal to or in excess of their CERCLA reportable quantities stored, released, or disposed of for 1 year or more
- Stored, released, or disposed quantities of petroleum products

A tenant survey questionnaire was developed in accordance with the requirements of Title 40 of the Code of Federal Regulations (CFR), Section 373 with input from the HPS Navy's caretakers support office. The survey attempted to discern information using the name of the hazardous substance; the Chemical Abstracts Services Registry Number, where applicable; the regulatory synonym of the hazardous substance as listed in 40 CFR Section 302.4, where applicable; the RCRA hazardous waste number as specified in 40 CFR Section 261.30, where applicable; the quantity in kilograms of the hazardous substances that were stored for 1 year or more, or known to have been released or disposed of on the property; and the date(s) that such storage, release, or disposal occurred. Appendix A of this report contains a copy of the tenant survey questionnaire.

Personnel familiar with the tenant's current operational procedures were interviewed at each building. Appendix B (Attachments B2 and B3) of this report contains summaries of the building personnel interviews. The hazardous material data collected from the 1997 tenant survey are presented in their entirety in table form in Appendix G of this report.

The hazardous materials survey was named the 1997 Tenant Survey to distinguish it from the 1995 VSIs. The 1997 Tenant Survey was conducted from September to November 1997 focusing on buildings and areas leased by the Navy to tenants. Approximately 55 buildings and their surrounding areas were inspected along with Dry Dock 4 and the railroad right-of-way (IR-52). The list of hazardous materials collected during the 1997 Tenant Survey is limited to information provided by the interviewees and what the survey team observed during building tours. Building tenants were requested, but not required, to provide lists of hazardous materials used in building operations and quantities, waste manifests, Material Safety Data Sheets, waste profiles, analytical reports, and waste management reports.

2.9 PROPERTY CLASSIFICATION

One purpose of the basewide EBS is to classify property at HPS according to the definitions in the "Standard Classification of Environmental Condition of Property Area Types." The "BRAC Cleanup Plan Guidebook" (DoD 1996) describes the seven DoD area type categories. Each category is briefly described in this section. Figure 2-1 is the DoD property classification process flow chart. The actual property classifications for HPS subparcels are presented in Section 7.1 of this basewide EBS report.

2.9.1 Category 1 – Areas Where No Release or Disposal of Hazardous Substances or Petroleum Products Has Occurred (Including No Migration of These Hazardous Substances From Adjacent Areas)

Category 1 areas are those areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). This area type is further defined as follows: a geographically contiguous and mappable area where the results of investigation show that no hazardous substances or petroleum products were released into the environment or disposed of on site property. A determination of this parcel type cannot be made unless a minimum level of information gathering and assessment has been completed. In accordance with Section 120(h)(4) of CERCLA as amended by CERFA, all such determinations of this area type (that is, "uncontaminated") were made on the basis of the following:

- Records search of the area in question and adjacent property
- Review of aerial photographs of the area
- VSI of the area and adjacent property
- Interviews with current employees or tenants regarding their knowledge of past and current activities on the property

If information gathered from these efforts indicated that hazardous substances or petroleum products had been released or disposed of in the area, the geographic location was classified as another area type.

2.9.2 Category 2 – Areas Where Only Release or Disposal of Petroleum Products Has Occurred

Category 2 areas are those areas where release or disposal of petroleum products has occurred. This area type is further defined as follows: a geographically contiguous and mappable area where the results of investigations show only that release or disposal of petroleum products has occurred.

2.9.3 Category 3 – Areas Where Release of Hazardous Substances Has Occurred, but at Concentrations that Do Not Require a Removal or Remedial Action

Category 3 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action because contamination is below action levels. This area type is further defined as follows: a geographically contiguous and mappable area where environmental evidence demonstrates that hazardous substances have been released or disposed of, but are present in quantities that require no response action to protect human health and the environment. Such quantities of hazardous substances can be below defensible detection limits, or can be above detection limits but below action levels. Below action level means that, in the absence of installation-specific risk-based or standards-based criteria, the concentration of any hazardous substance in any medium does not exceed chemical-specific applicable or relevant and appropriate requirements (ARAR).

Designation of this area type also means that estimates of risks associated with contamination at such areas do not:

- Exceed an excess lifetime cancer risk (ELCR) of 1×10^{-6} for any carcinogenic hazardous substance or petroleum constituent detected in any medium;

- Result in a hazard quotient (HQ) above 1.0 for any noncarcinogenic hazardous substance or petroleum constituent detected in any medium;

- Exceed an ELCR of 1×10^{-6} for all carcinogenic hazardous substances and petroleum constituents, taken together, in any exposure pathway;

- Result in a hazard index (HI) above 1.0 for all noncarcinogenic hazardous substances and petroleum constituents accumulated across all pathways;

- Exceed an ELCR of 1×10^{-4} for any carcinogenic hazardous substance accumulated across all pathways; and

- Result in an HI above 1 for all noncarcinogenic hazardous substances accumulated across all pathways.

A Category 3 area determination cannot be made with confidence unless a minimum level of information gathering and a SI or equivalent level of effort has been completed that includes biased field sampling and laboratory analysis to support a conceptual understanding of the area. Such determinations for HPS subparcels were made on the basis of the results of the human health risk assessments (HHRA) performed for each parcel.

2.9.4 Category 4 – Areas Where Release of Hazardous Substances Has Occurred, and All Remedial Actions Necessary to Protect Human Health and the Environment Have Been Taken

Category 4 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken. This area type is further defined as follows: a geographically contiguous and mappable area where all remedial actions necessary to protect human health and the environment have been taken. Category 4 areas include those areas in which hazardous substances are known to have been released or disposed of on the property. However, all remedial actions necessary to protect human health and the environment, with respect to any hazardous substances remaining on the property, have already been taken to meet the provisions of CERCLA Section 120(h)(3). "All remedial action has been taken" means that the construction and installation of an approved remedial design has been completed, the remedy has been demonstrated to the regulating agency, and the remedy has been operating properly and successfully (in practice, usually for 1 year).

2.9.5 Category 5 – Areas Where Release of Hazardous Substances Has Occurred and Removal or Remedial Actions are Under Way, but All Required Actions Have Not

Yet Been Implemented

Category 5 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, removal and/or remedial actions are underway, but all required remedial actions have not yet been taken. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is confirmed based on the results of sampling and analysis, and contained in electronic databases and/or environmental restoration and compliance reports. This area type contains contaminant concentrations above action levels and remedial systems or actions have not been completely instituted. Therefore, the area does not meet the criteria that would allow a determination of a Category 3 or 4 area. Remedial systems for Category 5 areas are partially or entirely in place, but have not been fully demonstrated.

2.9.6 Category 6 – Areas Where Release of Hazardous Substances Has Occurred, but Required Actions Have Not Yet Been Implemented

Category 6 areas are those areas where release, disposal, and/or migration of hazardous substances has occurred, but required response actions have not yet been implemented. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is confirmed based on the results of sampling and analysis as contained in electronic databases and/or environmental restoration and compliance reports. This area type contains contaminant concentrations above action levels. Therefore, the area does not meet the criteria that would allow a determination of a Category 3 area. Additionally, required remedial systems have not yet been selected or implemented that would allow a determination of a Category 4 or 5 area.

2.9.7 Category 7 – Unevaluated Areas or Areas Requiring Additional Evaluation

Category 7 areas are unevaluated or require additional evaluation. This area type is further defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is suspected, but not well characterized. The determination is based on the results of a properly scoped records search, chain-of-title review, aerial photograph review, VSI, employee interviews, and possible sampling and analysis. Category 7 sites do not fit, with certainty, any of the previous area types because evaluation efforts have not occurred, or are inconclusive.

2.10 DATA MANAGEMENT

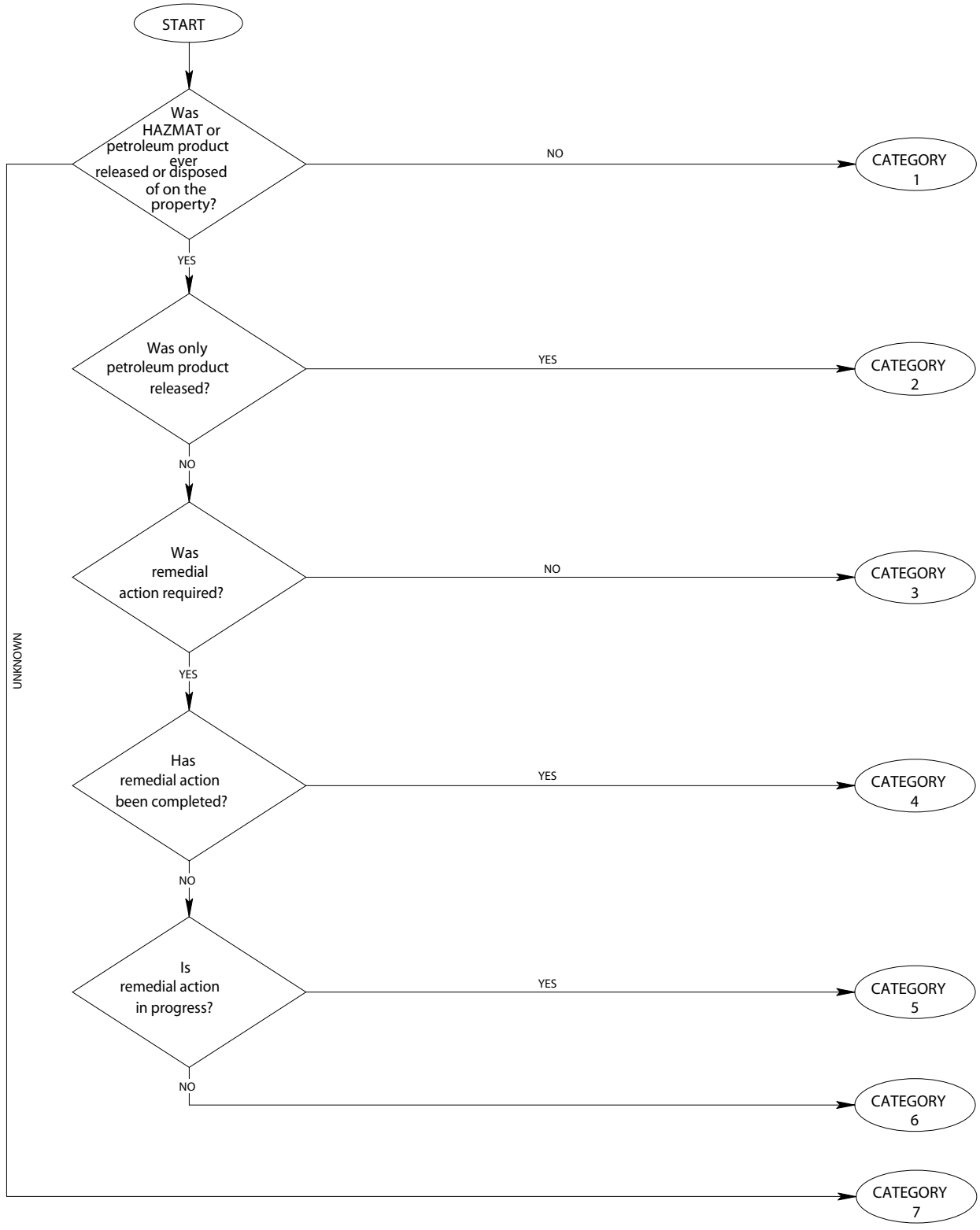
A relational database was developed using the program Paradox©. The database allows access to and manipulation of the data collected during the basewide EBS. Data gathered from survey questionnaires, interviews, and existing documents was entered into the Paradox© relational database tables. The EBS data model was designed to allow entry and retrieval of a wide variety of information collected during the course of the survey and is keyed to subparcels. Figure 2-2 is a flow chart of the database model that provides the database structure of the HPS Paradox© database. Data tables are organized and linked by subparcel number. A database output for each subparcel unit is included in Volume 2 of this report. The subparcel report is grouped in an alphanumerical order. Reports and tables for subparcel- and building-specific information such as USTs, buildings containing friable asbestos, and other topics are also included in the subparcel reports in Volume 2. The subparcel reports combine HPS information gathered during the 1995 VSI and available information presented in the HPS BCP, BER, IRP, and other HPS reports.

Database reports include tables on specific topics. The following list of the tables can be generated by the Paradox© database:

- Adjacent Parcel
- Additional (General) Comments
- Air Monitoring
- Asbestos
- ASTs
- Building Summary
- Building Type
- ECP Rationale for Property Classification
- Cultural Resources
- Hazardous Material (1942 through 1995)

- Hazardous Waste (1942 through 1995)
- IR/SI Sites
- Land Use
- Lead Survey
- PCB Contamination
- Physical Setting
- Radiation Survey/Investigation Areas
- Radon Survey
- References
- Roadways
- Site Summary
- Spills
- Subparcel
- Technical Documentation
- Topography
- USTs
- Utility
- 1995 VSIs
- 1997 Tenant Survey

The environmental chemistry data and geology data (such as boring logs, lithology, or water level measurement) generated by the IRP is also stored in a relational database. The IRP chemistry/geology database and EBS database can be joined and imported into a geographical information system (GIS) in the future. The GIS will be able to access the entire collection of data (chemical/geology and EBS [building-specific] data) for a selected physical location at HPS. Joining of the chemical/geology database with the EBS database was outside of the scope of the project.



Note: HAZMAT, for the purpose of this flow chart, is defined as any hazardous substance.

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

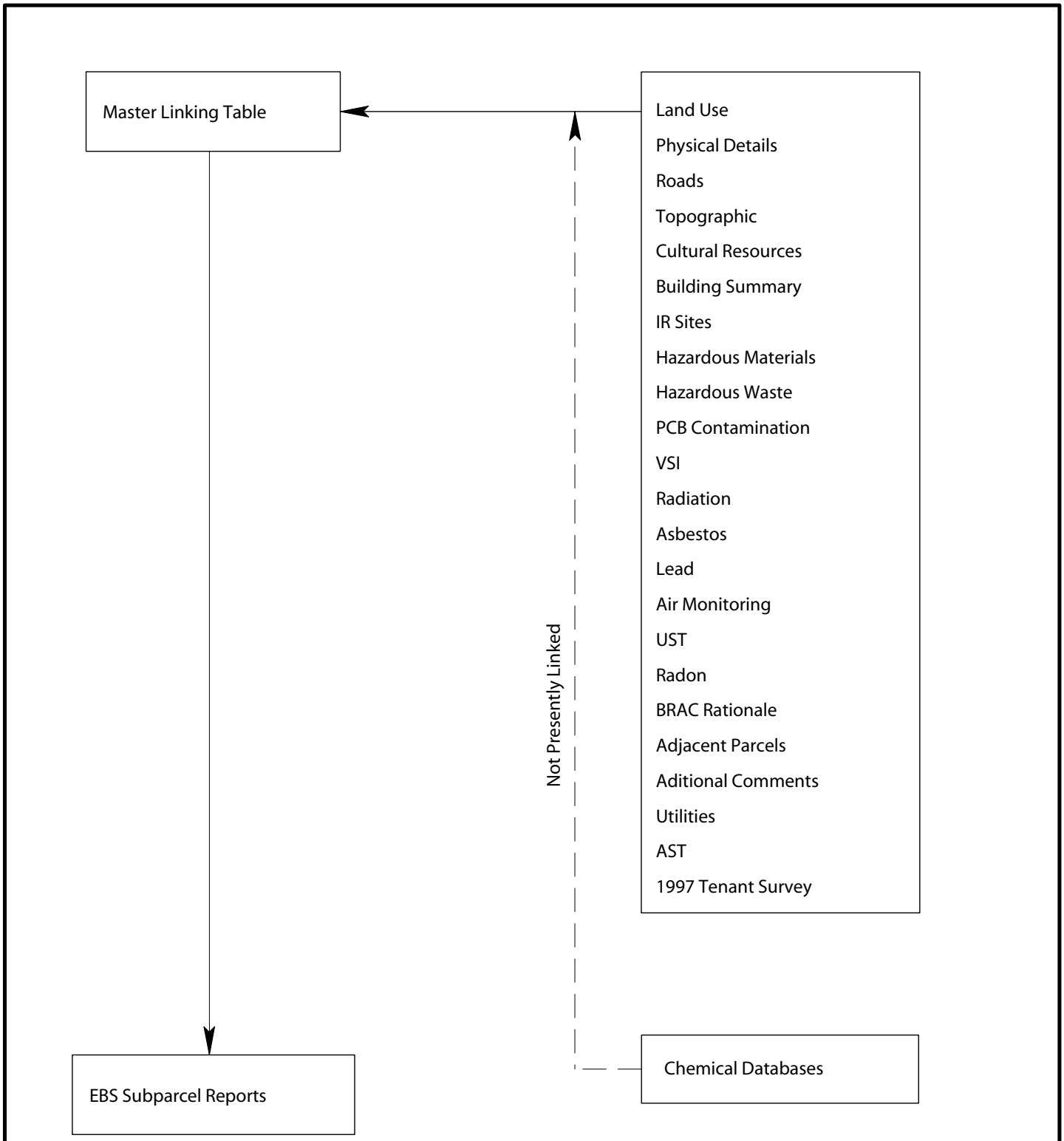
SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 2-1

PROPERTY CLASSIFICATION
PROCESS FLOW CHART
ENVIRONMENTAL BASELINE SURVEY

3/26/98 DN DDJ O:\HUNTER\EBS\FIG2-2.DWG



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 2-2

DATABASE MODEL

ENVIRONMENTAL BASELINE SURVEY

2/10/98 DN VEC O:\ALAMEDA\EBS\FIG2-1.DWG

TABLE 2-1

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1972	Foundation Investigation, Water Pollution Abatement Facilities	Facility Wide	05/08/72, Lowney Kaldveer
1984	IAS of Hunters Point Naval Shipyard	Facility Wide	10/01/84, NEESA
1986	Proposed Verification Step, Plan of Action	Facility Wide	01/16/86, EMCON
1986	Proposed Verification Step, Plan of Action	Facility Wide	04/01/86, EMCON
1986	Health and Safety Plan	Facility Wide	05/01/86, EMCON
1986	Errata; Revised Verification Step, Plan of Action	Facility Wide	06/12/86, EMCON
1986	Preliminary Investigation of Possible PCB Spill	Facility Wide	09/01/86, ERM West
1986	PCB Investigation	Facility Wide	11/01/86, ERM West
1987	Investigation of PCBs in Soil and Groundwater	Facility Wide	01/21/87, ERM West
1987	PCB Cleanup Work: Health and Safety Plan	Facility Wide	02/27/87, ERM West
1987	Final Draft Confirmation Study Verification Step, Volumes 1 through 4	Facility Wide	03/19/87, EMCON
1987	PCB Verification Sampling Result, Interim Report	Facility Wide	04/01/87, ERM West
1987	Draft-Survey/Asbestos Material with Organic and Inorganic Soil Contamination	Facility Wide	04/14/87, EMCON
1987	Soil and Water Sampling Near Proposed Galley	Facility Wide	06/01/87, ERM West
1987	NACIP Community Relations Plan	Facility Wide	06/01/87, Unknown
1987	Area Study for ACM, Volume 1	Facility Wide	07/02/87, EMCON
1987	Subsurface Investigation, Proposed Galley	Facility Wide	07/30/87, HLA
1987	Work Plan - Supplemental Site Study, Proposed Galley	Facility Wide	12/23/87, HLA
1987	Site Study, South Pier Utilities Project	Facility Wide	12/28/87, HLA
1987	Site Study Work Plan, Public Works Complex	Automobile Repair Shop	12/28/87, HLA
1987	Site Study Work Plan	Medical and Dental Facilities	12/29/87, HLA
1988	Draft Work Plan, Volume 2B, Sampling Plan	Group 2 Sites	01/01/88, HLA
1988	Draft Work Plan, Volume 3, QAPP	Facility Wide	01/01/88, HLA
1988	Draft Site Study Work Plan	Administration and Training Facility	01/13/88, HLA
1988	Draft Work Plan, Volume 5, Site Safety Plan	Facility Wide	01/20/88, HLA
1988	Site Study Work Plan, North Pier Modification	North Pier	01/21/88, HLA
1988	RAO, Hunters Point Naval Shipyard	Facility Wide	01/26/88, DHS

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1988	Site Study Work Plan, Public Works Complex/O&M	Facility Wide	01/26/88, HLA
1988	Draft Site Study Work Plan	Physical Fitness Facility and Gymnasium	01/28/88, HLA
1988	Draft Site Study Work Plan, Utilities Improvement	Utilities	01/28/88, HLA
1988	Evaluation of Pickling Tank Emergency Containment Structure	Pickling Tank IR-09	01/29/88, HLA
1988	Draft Work Plan, Volume 2C, Sampling Plan	Group 3 Sites	02/08/88, HLA
1988	Draft Work Plan, Volume 2E, Air Sampling Plan	Facility Wide	02/12/88, HLA
1988	EE/CA and AM Cleanup of ACM	Facility Wide	02/18/88, Navy
1988	Final Scoping Document, RI/FS, Volumes 1 through 3	Facility Wide	03/03/88, HLA
1988	Draft Work Plan, Sampling Plan, Volume 2A	Group 1 Sites	03/07/88, HLA
1988	Draft Work Plan, Sampling Plan, Volume 2D	Group 4 Sites	03/09/88, HLA
1988	Hazard Ranking System Package	Facility Wide	03/31/88, HLA
1988	Utilities Technical Study, Phase 2, Volume 5	Sanitary Sewers	04/01/88, YEI
1988	Draft Final Work Plan, Volume 5, Site Safety Plan	Facility Wide	04/14/88, HLA
1988	UST Investigation, Volumes 1 through 4, Work Plan	USTs	05/02/88, HAZWRAP
1988	Final Volume 3, QAPP, Work Plan, RI/FS	Facility Wide	05/27/88, HLA
1988	Draft Work Plan, Volume 6, Public Health and Environmental Evaluation	Facility Wide	06/01/88, ATT
1988	Storm Water Runoff Investigation	Storm Water System	06/06/88, HLA
1988	Draft Work Plan, Community Relations Plan	Facility Wide	06/20/88, HLA
1988	Draft Work Plan, Volume 4, Data Management Plan	Facility Wide	06/22/88, HLA
1988	Draft Volume 7, FS Work Plan	Facility Wide	06/22/88, HLA
1988	Draft Volume 1, Work Plan	Facility Wide	06/28/88, HLA
1988	Consulting Services SFDA Investigation	Facility Wide	06/29/88, HLA
1988	Final Volume 2B, Sampling Work Plan	Group 2 Sites	07/07/88, HLA
1988	Final Volume 2E, Air Sampling Work Plan	Facility Wide	07/22/88, HLA
1988	PCB Verification Sampling Results	Area 3	08/01/88, ERM West
1988	Work Plan for Cleanup of ACM	Facility Wide	08/09/88, HLA
1988	Final Work Plan for Cleanup of ACM	Facility Wide	08/09/88, ERM West
1988	Draft Supplement to Work Plan, Volume 2E, Air Sampling Plan	Facility Wide	08/26/88, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1988	Final UST Investigation, Volumes 1 through 4, Work Plan	USTs	09/16/88, HAZWRAP
1988	Tank Sampling Investigation	Tank Farm	10/19/88, HLA
1988	Building 123 Investigation	Building 123	11/02/88, HLA
1988	Officers Club Investigation	Officers Club	11/02/88, HLA
1988	Building 156 Investigation	Building 156	11/03/88, HLA
1988	Pumphouse Investigation	Building 819	11/03/88, HLA
1988	Characterization of Stored Drilling Muds and Boring Cuttings	Building 816	11/09/88, HLA
1988	Revisions to Final QAPP	Facility Wide	11/14/88, HLA
1988	Revised Final Volume 2B, Sampling Work Plan	Group 2 Sites	11/15/88, HLA
1988	Final Community Relations Plan	Facility Wide	11/30/88, HLA
1988	Utilities Technological Study, Phase 2, Volume 6	Storm Drain System	12/01/88, YEI
1988	Volume 2A, Sampling Work Plan, RI/FS	Group 1 Sites	12/05/88, HLA
1988	Volume 2C, Sampling Work Plan, RI/FS	Group 3 Sites	12/06/88, HLA
1988	Revised Final Volume 2D, Sampling Work Plan	Group 4 Sites	12/22/88, HLA
1989	Revised Final Community Relations Plan	Facility Wide	01/20/89, HLA
1989	Volume 4, Data Management Work Plan	Facility Wide	03/01/89, HLA
1989	Volume 7, FS Work Plan	Facility Wide	03/01/89, HLA
1989	Volume 6, Public Health and Environmental Evaluation Work Plan, RI/FS	Facility Wide	03/01/89, ATT
1989	Summary Report, Interim Cleanup of PCB Spill Site Near Former Building 503	Building 503, IR-08	03/03/89, ERM West
1989	Volume 1, Project Management Work Plan, RI/FS	Facility Wide	04/05/89, HLA
1989	PA Sites	PA-12 through PA-18	04/26/89, HLA
1989	Report of Air Monitoring Data Collected	IR-09	05/01/89, ATT
1989	Final Volume 1, Project Management Work Plan	Facility Wide	05/26/89, HLA
1989	Final Draft Solid Waste Air Quality Assessment Test	IR-01, IR-02, and IR-12	08/04/89, HLA
1989	Technical Report, UST Investigation	USTs	08/07/89, HAZWRAP
1989	Work Plan for Field Treatment Demonstration and Removal of Sandblasting Grit	Sandblast Grit	09/26/89, Battelle
1989	Waste Management Plan for the RI/FS Field Activities	Facility Wide	11/03/89, Universal

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
			Engineering
1989	PA	PA-12 through PA-18	11/16/89, HLA
1989	Draft SI Work Plan	PA-13 and PA-15 through PA-18	12/01/89, HLA
1989	Draft Soil and Sludge Sampling	Tank S-505	12/01/89, HAZWRAP
1989	Technical Report, UST Investigation	USTs	12/07/89, HLA
1989	Draft Results, Soil and Liquid Sampling at UCSF Property	UCSF Property	12/21/89, HLA
1990	Draft First Round Groundwater Sampling, Primary RI, Battery and Electroplating Shop	IR-10	01/02/90, HLA
1990	Draft First Round Groundwater Sampling, Primary RI	Power Plant, IR-11	01/02/90, HLA
1990	Air Modeling and Risk Assessment of Airborne Contaminants During Proposed Removal Action	Tank Farm and Pickling and Plate Yard	02/01/90, Navy
1990	Draft Volume 1 Remedial Action Work Plan	Pickling and Plate Yard	02/09/90, HLA
1990	Candlestick Point State Recreational Area - Soil and Water Quality Investigation Report	Off Site	03/13/90, CCSFDPW
1990	SI Work Plan	PA-16 and PA-18	03/14/93, HLA
1990	Draft Interim Report, Phase 1, Primary RI	Pickling and Plate Yard	03/20/90, HLA
1990	Final Draft Work Plan for Removal Action	Tank S-505	03/29/90, HLA
1990	Draft Interim Report, Phase 1, Primary RI, PCB Soil Area	Building 503, IR-08	04/03/90, HLA
1990	Draft Interim Report, Phase 1, Primary RI	Tank Farm	04/05/90, HLA
1990	Draft Work Plan, Removal Action, Volume 1	Tank Farm	04/16/90, HLA
1990	Removal Action Plan and Closure Plan	UST Phase 1	05/29/90, PRC
1990	Draft Work Plan, Sampling and Analysis of Untreated and Treated Sandblast Grit	Sandblast Grit	06/28/90, Battelle
1990	Draft Reconnaissance Activities Report, RI/FS, Volumes 1 through 3	Facility Wide	08/09/90, HLA
1990	Draft Environmental Sampling and Analysis Plan	Parcel F	08/28/90, ATT
1990	Draft Final Removal Action, Volume 1, Work Plan	Tank S-505	08/28/90, HLA
1990	FFA for Treasure Island Naval Shipyard and Hunters Point Naval Shipyard	Facility Wide	09/01/90, EPA
1990	Draft Work Plan, Volume 1, Project Management Plan, Update	Facility Wide	09/07/90, PRC
1990	Draft Removal Action Plan and Closure Plan	UST Phase 1	09/12/90, PRC

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1990	Removal Action, Volume 1, Work Plan	Tank Farm	09/13/90, HLA
1990	Draft Work Plan, Volume 2F, Sampling Plan, RI/FS	Group 5 Sites	09/17/90, HLA
1990	Draft Addendum: Removal Action, Volume 1, Asbestos Abatement Work Plan	Tank S-505	10/08/90, HLA
1990	Bench-Scale Treatability Test Plan/Recycle Sandblasting Grit to Asphalt	Sandblast Grit	10/15/90, Battelle
1990	Draft Clean-Background Sampling Plan	Facility Wide	10/15/90, PRC
1990	Addendum to Removal Action, Volume 1, Asbestos Abatement Work Plan	Tank Farm	10/16/90, HLA
1990	PA Other Areas/Utilities, Volumes 1 and 2	Utilities	10/19/90, HLA
1990	Post Construction Report on the Cleanup of ACM at the Water-Softening Treatment Area	Building 521 and Various Remote Sites	12/03/90, PRC
1990	Draft Final Removal Action Plan and Closure Plan	UST Phase 1	12/03/90, Navy
1990	Draft Summaries, First Groundwater Sampling	IR-06, IR-08, and IR-09	12/06/90, HLA
1990	Work Plan, Volume 2F, Sampling Plan, RI/FS	Group 5 Sites	12/13/90, HLA
1990	Draft Final Addendum to Removal Action, Volume 1, and Asbestos Abatement Work Plan	Tank S-505	12/19/90, HLA
1991	Characterization of Untreated/Treated Sandblast Grit: Supplemental Sampling and Analysis Plan	Sandblast Grit	01/01/91, Battelle
1991	Draft Addendum 1 to Removal Action, Volume 1, Work Plan	Tank Farm	01/02/91, HLA
1991	Chemical Stabilization of Metal-Contaminated Sandblast Grit, Volumes 1 through 3	Sandblast Grit	01/25/91, Battelle
1991	Draft Final Removal Action Plan and Closure Plan, Attachment 1	UST Phase 1	02/11/91, PRC
1991	Health and Safety Plan, Environmental Sampling and Analysis Plan	Parcel F	03/04/91, ATT
1991	QAPP for Environmental Sampling and Analysis Plan	Parcel F	03/04/91, ATT
1991	Environmental Sampling and Analysis Plan	Parcel F	03/14/91, ATT
1991	Draft Removal Action Plan and Closure Plan	UST Phase 1	03/14/91, PRC
1991	Summary of Findings Memorandum, Volumes 1 and 2	OU II Sites	04/18/91, HLA
1991	Removal Action, Volume 1, Work Plan	IR-09	04/26/91, HLA
1991	Draft Results of Rounds 1 and 2 Groundwater Sampling and Recommendations for Round 3	OU II Sites	05/14/91, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1991	Product Recovery Site Characterization Oil Reclamation Ponds	IR-03	05/15/91, HLA
1991	Field Demonstration Asphalt Treatment Technology for Sandblast Grit, Work Plan	Sandblast Grit	05/21/91, Battelle
1991	Phase 2A - Phase 2B Sampling Program, Modifications, Sub-Base Area	IR-07	07/01/91, HLA
1991	Draft Final Removal Action and Tank Abandonment Plan	USTs	07/08/91, PRC
1991	Draft Field Demonstration Asphalt Treatment Technology for Sandblast Grit, Work Plan	Sandblast Grit	07/09/91, Battelle
1991	Draft Water Quality Investigation of Storm Water Drainage	Storm Water System	07/10/91, HLA
1991	Water Quality Investigation of Storm Water Drainage	Storm Water System	07/10/91, HLA
1991	Environmental Sampling and Analysis Plan and Addendum (dated 01/29/91)	Parcel F	07/31/91, ATT
1991	QAPP for Environmental Sampling and Analysis Plan	Parcel F	07/31/91, ATT
1991	Health and Safety Plan for Environmental Sampling and Analysis Plan	Parcel F	07/31/91, ATT
1991	Draft SI for PA-16 and PA-18 and RI Work Plan for PA-18	PA-16 and PA-18	09/09/91, HLA
1991	Primary Phase 2A Data Submittal Recommendation Phase 2B Sampling Modification	IR-04 and IR-05	09/23/91, HLA
1991	Draft Volume 2G: Sampling Work Plan Work	Group 6 Sites	10/21/91, HLA
1991	Draft Aquifer Testing Work Plan RI/FS	Facility Wide	10/22/91, HLA
1991	Preliminary Draft ERA Data Summary Report	Parcel F	11/15/91, HLA
1991	Draft Primary Phase 2A Data Submittal/Recommendation for Phase 2B Sampling Program, Volumes 1 and 2	OU II Sites	11/21/91, HLA
1991	Draft Phase 1 Aquifer Testing Results, Recommendations for Phase 2 Aquifer Testing	OU II	11/21/91, HLA
1991	Draft SI Work Plan: PA Other Areas/Utilities, Volume 1	Underground Utilities	12/20/91, HLA
1991	Draft SI Work Plan: PA Other Areas/Utilities, Volume 2	PA-19, PA-24, PA-32, PA-36, and PA-39	12/23/91, HLA
1992	Draft Final SIs for PA-16 and PA-18 and RI Work Plan for PA-18	PA-16 and PA-18	01/02/92, HLA
1992	Draft Air Sampling Report	Facility Wide	01/02/92, HLA
1992	Draft Summary of Findings Memorandum	OU IV and IR-07	01/16/92, HLA
1992	Draft Air Sampling Report	Facility Wide	01/21/92, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1992	Environmental Sampling and Analysis Plan Addendum	Parcel F	01/29/92, ATT
1992	Slug Test Data Results	IR-15 and IR-17	02/06/92, HLA
1992	Draft Final Aquifer Testing Work Plan RI/FS	Facility Wide	02/19/92, HLA
1992	Removal Action	Tank Farm	02/20/92, HLA
1992	Draft Final Work Plan, Volume 2G - Sampling Plan	Group 6 Sites	02/24/92, HLA
1992	Draft Initial Screening of Alternatives	OU II Sites	03/12/92, HLA
1992	Draft SCRS and Investigation	OU I and OU IV	03/18/92, PRC
1992	Addendum to Work Plan, Volume 2F, Sampling Plan, RI/FS	Group 5 Sites	03/18/92, HLA
1992	Volume 2G, Sampling Work Plan	Group 6 Sites	03/18/92, HLA
1992	Draft Technical Memorandum Background Soil and Groundwater Conditions	Facility Wide	03/19/92, HLA
1992	Draft Final SI Work Plan: PA Other Areas/Utilities, Volume 2	Utilities and Other Areas	03/31/92, HLA
1992	Preliminary Draft Pre-Public Health and Environmental Evaluation Data Analysis	OU IV Sites	03/31/92, HLA
1992	Draft Final SI Work Plan: PA Other Areas/Utilities, Volume 1	Utilities and Other Areas	04/01/92, HLA
1992	Technical Memorandum, Redefinition	OU V Sites	04/19/92, HLA
1992	Exhibit Plates for Draft SI Work Plan: PA Other Areas/ Utilities, Volume 3: 26 Sites	Utilities and Other Areas	05/05/92, HLA
1992	Draft ERA Work Plan	Facility Wide	05/07/92, HLA
1992	Draft Status Report for Field Demonstration of Asphalt Treatment Technology for Spent Sandblast Grit	Sandblast Grit	06/05/92, Battelle
1992	Draft RI Report, Volumes 1 through 4	OU II Sites	06/12/92, HLA
1992	Draft Water Quality Investigations of Storm Water Drainage	Storm Water System	07/10/92, HLA
1992	Preliminary Draft Public Health and Environmental Evaluation, Volumes 1 and 2	OU II Sites	07/17/92, HLA
1992	Draft Final SI Work Plan: PA Other Areas/Utilities, Volume 3: 26 Sites	Utilities and Other Areas	07/22/92, HLA
1992	Draft Final Facility Groundwater Monitoring Plan, RI/FS	Facility Wide	07/24/92, HLA
1992	Draft Final Air Sampling Report and Work Plan	Facility Wide	07/31/92, HLA
1992	Draft Tank Contents and Analysis	USTs/IR-06	08/03/92, PRC
1992	Draft Technical Memorandum, Tidal Influence Monitoring	Facility Wide	08/06/92, HLA
1992	Draft Public Health and Environmental Evaluation,	OU II Sites	08/12/92, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
	Volumes 1 and 2		
1992	Summary Report of UST Removals	USTs	08/28/92, PRC
1992	Draft Final ERA Work Plan	Facility Wide	09/09/92, HLA
1992	Preliminary Draft FS Report	OU II Sites	09/18/92, HLA
1992	Draft FS Report	OU II Sites	10/12/92, HLA
1992	Draft SCRS Report and Appendices, Volumes 1 and 2	OU I and OU IV	11/03/92, PRC
1992	Survey for Long-Lived Airborne Gross Alpha and Beta Radioactivity Report and Field Calibration Data	OU I and OU IV	11/03/92, PRC
1992	Final Summary Report of UST Removals (July - October 1991)	USTs/Phase 1	11/18/92, PRC
1992	RI/FS Planning and Implementation Project Management Work Plan, Revision 02	Facility Wide	12/01/92, PRC
1992	Draft On-Site Soil Treatment FS	Facility Wide	12/23/92, PRC
1993	Phase II - Radiation Investigation Final Field Work Plan	Facility Wide	01/13/93, PRC
1993	Draft Interim Action ASR	OU IV Sites	01/15/93, HLA
1993	Draft OU I and Intertidal Sediment Sampling Data, the Environmental Sampling and Analysis Plan, Offshore Data, Storm Water and Bay Water Data	OU I Sites	01/29/93, HLA
1993	Draft Summary ASR	OU II Sites	02/08/93 HLA
1993	Health and Safety Plan, PA/SI	PA-19 and PA-43	02/09/93, PRC
1993	Draft Removal Action Plan and Tank Abandonment Plan Addendum	USTs/Phase II	02/10/93, PRC
1993	Draft Interim Action ASR	OU III Sites	03/12/93, HLA
1993	Preliminary Draft Treatability Study Work Plan	OU I Sites	03/26/93, HLA
1993	Supplemental Environmental Sampling and Analysis Plan Data Submittal	Parcel F	04/15/93, HLA
1993	Data Validation Summary Analysis, Environmental Assessment and Sampling Plan	Parcel F	04/15/93, PRC
1993	Draft Final Interim Action ASR	OU IV Sites	04/26/93, HLA
1993	Preliminary Draft Final Summary ASR	OU II Sites	05/03/93, HLA
1993	Preliminary Draft Final Interim Action ASR	OU III Sites	05/05/93, HLA
1993	Draft Final Interim Action ASR	OU III Sites	05/12/93, HLA
1993	Draft Final Interim Action ASR	OU II Sites	05/14/93, HLA
1993	Investigation of Tritium in Surface Soils and Paving Materials	Building 816	05/17-18/93, NAEC

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
	Surrounding Building 816, Volumes 1 through 3		
1993	Draft Steamline Pipe Access, Spill Prevention and Contingency Plan	SI-45	05/25/93, HLA
1993	Draft Treatability Study Work Plan	OU I and IR-03	06/17/93, HLA
1993	Ionizing Radiation Protection Program (CLEAN)		06/25/93, PRC
1993	Draft Treatability Study Work Plan for Treating Subsurface Petroleum Products by Biodegradation	IR-03	06/29/93, PRC
1993	Technical Memorandum, Tidal Influence Monitoring	Facility Wide	07/20/93, HLA
1993	Tidal Influence Monitoring Plan, Third Quarter Data Submittal	Facility Wide	07/16/93, HLA
1993	Investigation of Tritium in Surface Soils and Paving Materials Surrounding Building 816	Building 816	07/30/93, PRC
1993	Survey for Long-Lived Airborne Gross Alpha and Beta Radioactivity at NAS Treasure Island, Volume 1	OU I and OU IV	07/30/93, NAEC
1993	Draft SI Report	Parcel A	07/30/93, PRC
1993	Draft Interim Action ASR, Volumes 1 and 2	Group 5 Sites	08/26/93, HLA
1993	Draft Report of Results Work Plan Addendum Number 3, SI Report	Parcel A	09/16/93, HLA
1993	Draft Final SI Report	Parcel A	10/15/93, PRC
1993	Draft Tank Farm Removal Action Report, Appendices A through I	Tank Farm	10/22/93, HLA
1993	Draft Report of Results Work Plan Addendum Number 4 and SI Report	Parcel A	10/29/93, HLA
1994	Annual Report for Storm Water Discharges Associated with Industrial Activities		1994, SWRCB
1994	Draft Construction Summary Report, Removal Action, Appendices A through K	Tank S-505	01/05/94, HLA
1994	Draft SI Report	Parcel B	01/11/94, HLA
1994	Draft SI Report	Parcel C	01/25/94, HLA
1994	RI Data Presentation Meeting	Group 6 Sites	01/28/94, HLA
1994	Navy Responses to Agency Comments, Draft ASR Interim Action	Group 5 Sites	02/25/94, PRC
1994	BRAC Cleanup Plan	Facility Wide	03/05/94, PRC
1994	HPS EBS	Dry Dock 4	03/29/94, MINS
1994	Draft Final SI Report	Parcel B	04/08/94, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1994	Final Assessment Report, Potentially Contaminated Sites	Parcels B, C, D, and E	04/15/94, HLA
1994	Sample Analysis Plan for CTO 276	Parcels B, C, D, and E	04/18/94, HLA
1994	Initial Investigations, Historical District	Parcels B and C	04/29/94, EFA West
1994	Draft Final SI Report	Parcel C	05/02/94, HLA
1994	Draft November 1993 Quarterly Groundwater Monitoring Data Submittal	OU II Sites	05/04/94, HLA
1994	Results of Aquifer Testing	OU III	05/10/94, HLA
1994	Land-Use Plans	Parcels A, B, C, D, and E	05/10/94, SFRA
1994	Database Management System Technical Memorandum	Facility Wide	05/16/94, PRC
1994	Draft Technical Memorandum, Integration of Facility-Wide Hydrogeologic Data (HPS Hydrogeologic Report), Volumes I through V	Facility Wide	05/27/94, PRC
1994	Draft Final SI Report	Parcel D	05/30/94, HLA
1994	Removal Action	Tank Farm	06/23/94, HLA
1994	Draft February 1994 Quarterly Groundwater Monitoring Data Submittal	OU II Sites	06/30/94, HLA
1994	Final Report, San Francisco Estuary Pilot Regional Monitoring Program: Sediment Studies	Parcel F	07/94, RWQCB
1994	Compilation of Groundwater Parameter Data Sheets, Volumes I through IV	Facility Wide	07/01/94, PRC
1994	Draft Summary Report of Phases I and II - UST Removals and Closures in Place	Facility Wide	07/12/94, PRC
1994	Phase 1A ERA, Volume IIIA	Parcel F	07/14/94, PRC
1994	Phase 1A ERA, Volumes 1 through 5	Facility Wide	07/15/94, PRC
1994	Fence-to-Fence Survey, Volumes 1 and 2 (received by PRC on 07/19/94)	Facility Wide	07/19/94, Tetra Tech
1994	Draft Final SI Report	Parcel E	07/22/94, HLA
1994	Phase 1A ERA, Tasks 2 and 3 Summary Report	Parcel F	07/27/94, PRC
1994	Draft Addendum to the Facility Groundwater Monitoring Plan for Parcels B, D, and E	Parcels B, D, and E	08/04/94, HLA
1994	Preliminary Draft, Parcel A SI	Parcel A	09/08/94, Unknown
1994	Preliminary Draft Addendum Number 3 to Parcel A SI Report	Parcel A	09/08/94, HLA
1994	Draft Final Construction Summary Report, Volume 1	Parcel D	10/03/94, HLA
1994	Preliminary Draft, Phase 1B ERA	Parcel F	10/04/94, PRC

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1994	Preliminary Draft, Storm Drain Compilation	Facility Wide	11/23/94, PRC
1994	Work Plan, Additional Scope of Work, RI - Field Work, Parcels B, C, D, and E	Parcels B, C, D, and E	12/21/94, HLA
1995	Annual Report for Storm Water Discharges Associated with Industrial Activities	Facility Wide	1995, SWRCB
1995	Air Monitoring Project, HPS, Draft Report, Volumes I and II, Appendices A through H	Facility Wide	01/06/95, Brown and Caldwell
1995	Revision 01, BRAC Cleanup Plan	Facility Wide	02/24/95, PRC
1995	RI/FS Field Work and Analysis, Parcels B, C, D, and E	Parcels B, C, D, and E	03/09/95, HLA
1995	Draft QAPP	Facility Wide	07/05/95, PRC
1995	Draft Final Work Plan, Treatability Study for Treating Subsurface Petroleum Products at IR-03 by Bioremediation	Parcel E	07/10/95, PRC and Evoca
1995	Calculation of HPALs	Facility Wide	08/17/95, PRC
1995	FFA and Appendix A	Facility Wide	08/18/95, Navy
1995	Parcel A Asbestos Remediation Report	Parcel A	09/12/95, ECC
1995	Draft Final Parcel A RI Report	Parcel A	09/22/95, PRC
1995	Draft SSEBS, Group I – Buildings 101, 103, 104, 110, 115, 116, 117, and 120	Group I	11/01/95, AFA and Golder and Associates
1995	Parcel A ROD	Parcel A	11/16/95, PRC
1995	Draft Facility-Wide Groundwater Monitoring Plan	Facility Wide	11/27/95, PRC
1995	Draft EE/CA - Removal Action Documentation for Exploratory Excavation Sites	Parcels B, C, D, and E	11/29/95, PRC
1995	Preliminary Draft SSEBS, Group II – Buildings 323, 363, 364, 366, 371, 401, 402, 404, 405, 406, 407, 411, 413, 417, 418, 424, 435, 439, and 704	Group II	12/01/96, AFA and Golder and Associates
1996	FOSL, Buildings 368 and 369 and Berth 14	Buildings 368 and 369 and Berth 14	January 1996 (Rev.), AFA and Golder and Associates
1996	Preliminary Draft SSEBS - Group III - Buildings 114, 125, 128, and 134	Group 3 Sites	01/01/96, AFA and Golder and Associates
1996	Preliminary Draft SSEBS - Group IV - Buildings 230, 272, and 275	Group 4 Sites	01/01/96, AFA and Golder and Associates
1996	Preliminary Draft SSEBS - Group V - Building 808 and Railroad Tracks	Group 5 Sites	01/01/96, AFA and Golder and Associates
1996	FOSL, Building 414 and Adjacent Lot	Building 414	February 1996,

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
			AFA and Golder and Associates
1996	FOSL, Group I – Buildings 101, 103, 104, 110, 115, 116, 117, and 120	Group 1 Sites	February 1996; AFA and Golder and Associates
1996	BRAC Cleanup Plan	Facility Wide	03/15/96, PRC
1996	Final Facility-Wide Groundwater Monitoring Plan	Facility Wide	04/05/96, PRC
1996	Updated Community Relations Plan	Facility Wide	05/01/96, PRC
1996	Removal Action Implementation Work Plan - IR-01/21: Industrial Landfill Groundwater Plume	IR-01/21	05/01/96, PRC
1996	Parcel A Storm Drain Monitoring Report	Parcel A	05/03/96, PRC
1996	Study of Groundwater Sampling Methods for Metals - Technical Memorandum	Facility Wide	05/10/96, PRC
1996	FOSL, Buildings 274 and 282	Buildings 274 and 282	05/17/96, PRC
1996	SSEBS, Buildings 274 and 282	Buildings 274 and 282	05/17/96, PRC
1996	Air Monitoring Project, HPS, Volume 1	Facility Wide	05/20/96, PRC/ Brown and Caldwell
1996	Air Monitoring Project, HPS, Volume 2	Facility Wide	05/20/96, PRC/ Brown and Caldwell
1996	OU II Annual Groundwater Monitoring Report, HPS	OU II	05/22/96, HLA
1996	Draft Final HPS Installation-Specific QAPP Elements	Facility Wide	05/24/96, PRC
1996	Technical Memorandum, Review of PCB Occurrences in Soil and Groundwater, HPS	Facility Wide	05/31/96, HLA
1996	Basewide EBS, Volumes 1 and 2	Facility Wide	06/03/96, PRC
1996	Draft Final Parcel B RI Report, Volumes I through XIV, Text, Tables, and Figures	Parcel B	06/03/96, PRC, HLA, LFR, and Uribe
1996	Final Basewide EBS, Volumes 1 and 2	Facility Wide	06/03/96, PRC
1996	Basewide Health and Safety Plan	Facility Wide	06/05/96, PRC
1996	Draft Parcel A FOST	Parcel A	06/24/96, PRC
1996	FOSL, Group II – Buildings 323, 363, 364, 366, 371, 401, 402, 404, 405, 406, 407, 411, 413, 417, 418, 424, 435, and 704	Group 2 Sites	July 1996, AFA
1996	Health and Safety Standard Operating Procedures	Facility Wide	07/18/96, PRC
1996	Draft Construction Summary Report - Pickling and Plate Yard Removal Action, Volumes I and II	Pickling and Plate Yard	07/31/96, HLA

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1996	FOSL, Building 258	Building 258	August 1996, AFA
1996	FOSL, Group III – Buildings 114 (113A), 125, 128, and 134	Group 3 Sites	November 1996, AFA
1996	Draft Final Parcel B FS, Volumes I and II	Parcel B	09/03/96, PRC
1996	Estimation of HGALs - Technical Memorandum	Facility Wide	09/16/96, PRC
1996	Draft Parcel D FS, Volumes I and II	Parcel D	09/26/96, PRC and LFR
1996	Draft Phase 1B ERA, Nature and Extent of Contamination, Volume I, Part 1	Facility Wide	09/30/96, PRC
1996	Draft Phase 1B ERA, Chemistry and Toxicity Results, Volume II, Part 1	Facility Wide	09/30/96, PRC
1996	Draft Final Phase III Radiation Investigation Field Work Plan	NRDL Sites	10/15/96, PRC
1996	Draft Final Parcel B Proposed Plan	Parcel B	10/16/96, PRC
1996	Draft Parcel B ROD	Parcel B	10/17/96, PRC
1996	Draft Final Parcel D RI Report, Volumes I through XXIV	Parcel D	10/25/96, PRC, HLA, LFR, and Uribe
1996	Parcels B, C, and D Evaluation of DNAPLs at Selected IR Sites	Parcels B, C, and D	10/30/96, PRC
1996	FOSL - Building 606	Parcel D	10/31/96, PRC
1996	Supplemental SSEBS, Building 606	Parcel D	10/31/96, PRC
1996	FOSL, Group VI – Buildings 230, 272, and 275	Group 6 Sites	November 1997, AFA
1996	Draft Phase 1B ERA, Risk Characterization for Aquatic Receptors, Volume I, Part 2	Facility Wide	11/15/96, PRC
1996	Draft Parcel C RI Report	Parcel C	11/29/96, PRC, LFR, and Uribe
1997	Preliminary Draft Parcel D Proposed Plan	Parcel D	01/15/97, PRC
1997	Draft Final Parcel D FS Report	Parcel D	01/24/97, PRC
1997	Final Revised Community Relations Plan	Facility Wide	01/31/97
1997	Draft Parcel C FS Report	Parcel C	02/27/97, PRC and LFR
1997	Revised HPS BRAC Cleanup Plan	Facility Wide	02/21/97, PRC
1997	Draft Final Parcel D RI Report and Response to Comments	Parcel D	02/25/97, PRC
1997	Draft Final Parcel C RI and Response to Comments	Parcel C	03/13/97, PRC
1997	Draft Phase 1B ERA Response to Comments	Parcel F	03/17/97, PRC
1997	Facility-Wide Hydrogeological Conceptual Model Technical	Facility Wide	03/18/97, PRC

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
	Memorandum		
1997	FOSL, Building 809 and Surrounding Yard	Building 809	April 1997, AFA
1997	Addendum to Ecotoxicological Testing Field Sampling and Analysis Plan	Parcel F	04/11/97, PRC
1997	Draft Final Parcel D Proposed Plan	Parcel D	04/21/97, PRC
1997	Draft Parcel B Data Gaps Field Sampling and Analysis Work Plan	Parcel B	04/25/97, PRC
1997	Parcel D Proposed Plan	Parcel D	05/06/97, PRC
1997	Draft Parcel E RI Report	Parcel E	05/29/97, PRC
1997	Draft Ecological Data Risk Ranking Analysis	Parcel F	06/23/97, PRC
1997	Preliminary Final Parcel B ROD	Parcel B	06/03/97, PRC
1997	Draft Final Parcel C RI Report and Response to Comments	Parcel C	06/05/97, PRC
1997	1996-1997 Storm Water Annual Report	Facility Wide	06/25/97, Radian
1997	Revised Parcel B Data Gaps Field Sampling and Analysis Work Plan	Parcel B	07/10/97, PRC
1997	Draft Final Construction Summary Report of Pickling and Plate Yard Removal Action	Pickling and Plate Yard	08/02/97, PRC
1997	Draft Final Parcel B ROD	Parcel B	08/04/97, PRC
1997	Draft Final Parcel D FS Report and Response to Comments	Parcel D	08/29/97, PRC
1997	Draft Summary Report for Exploratory Excavations	Parcel D	09/29/97, PRC
1997	Final Parcel B ROD	Parcel B	10/09/97, TtEMI
1997	Draft Work Plan for Parcel C Treatability Study Activities	Parcel C	10/22/97, TtEMI
1997	Draft Parcel B Remedial Design Documents	Parcel B	10/23/97, TtEMI
1997	Draft Final Parcel E RI Report	Parcel E	10/27/97, TtEMI
1997	Draft Final FOSL for Building 813 and Trailer Lot	Building 813 and Trailer Lot	09/11/97, PRC
1997	Draft Final FOSL for Building 915 and Building E	Building 915 and Building E	09/11/97, Radian
1997	Draft Parcel D ROD	Parcel D	11/03/97, TtEMI
1997	Draft Parcel B CAP	Parcel B	11/04/97, AFA
1997	Parcel E RI Report - Appendix E Phase III Radiation Investigations	Parcel E	11/17/97, TtEMI
1997	Responses to EPA Comments on Draft Work Plan for Parcel C Treatability Study Activities	Parcel C	11/20/97, TtEMI

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Year	Report Title	Site Examined	Date and Company
1997	Revised Parcel B Data Gap Field Sampling and Analysis Work Plan Response to Comments	Parcel B	11/24/97, TtEMI
1997	Parcel F ER-M Screening Evaluation at HPS	Parcel F	11/24/97, TtEMI
1997	Draft FOSL for Helicopter Landing Pad near Building 606	Helicopter Landing Pad and Building 606	11/24/97, TtEMI
1997	Draft Parcel B RAMP	Parcel B	12/05/97, TtEMI
1997	AST Interim Field Report	ASTs	07/09/97, IT
1997	Storm Drain Sediment Removal Action Draft Field Summary Report	Parcels B through E	12/19/97, IT
1998	Draft Final Basewide FOSL	Basewide	01/07/98, TtEMI
1998	Draft Parcel E FS	Parcel E	1/15/98, TtEMI
1998	Final Basewide FOSL (Excluding Parcel A)	Parcels B, C, D, E, and F	3/98, TtEMI
1998	Draft Parcel F FS	Parcel F	4/3/98, TtEMI and LFR
1998	Final SSEBS Proposed HLP Area	HLP	6/12/98, TtEMI
1998	Draft Final Parcel C FS	Parcel C	7/15/98, TtEMI and LFR

Notes:

ACM	Asbestos-containing material
AFA	Air Force Army Construction, Inc.
AM	Action memorandum
ASR	Alternative selection report
ATT	Aqua Terra Technology
Battelle	Battelle Laboratories
BRAC	Base Realignment and Closure
CAP	Corrective action plan
CCSFDPW	City and County of San Francisco Department of Public Works
CLEAN	Comprehensive Long-Term Environmental Action - Navy
CTO	Contract task order
DHS	California Department of Health Services
DNAPL	Dense nonaqueous-phase liquid
EBS	Environmental baseline survey
ECC	Environmental Chemical Corporation
EE/CA	Engineering evaluation/cost analysis
EFA West	Engineering Field Activity West
EMCON	EMCON Associates
EPA	U.S. Environmental Protection Agency
ERA	Ecological risk assessment
IR	Installation restoration
IT	IT Corporation
LFR	Levine-Fricke-Recon
MINS	Mare Island Naval Shipyard
NACIP	Navy Assessment and Control of Industrial Pollutants Program
NAEC	Normandeau Associates Environmental Consulting
NAS	Naval Air Station
Navy	U.S. Department of the Navy
NEESA	Naval Energy and Environmental Support Activity
NRDL	U.S. Naval Radiological Defense Sites
O&M	Operations and maintenance
OU	Operable unit
PA	Preliminary assessment
PCB	Polychlorinated biphenyl
PRC	PRC Environmental Management, Inc.
QAPP	Quality assurance project plan
Radian	Radian Corporation
RAO	Remedial action order
RI	Remedial investigation

TABLE 2-1 (Continued)

CHRONOLOGICAL LIST OF ENVIRONMENTAL REPORTS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

ER-M	Effects-range median
ERM West	Environmental Resource Management, West
Evoca	Evoca Incorporated
FFA	Federal Facilities Agreement
FOSL	Finding of suitability to lease
FOST	Finding of suitability to transfer
FS	Feasibility study
HAZWRAP	Hazardous Waste Remedial Actions Program
HGAL	Hunters Point groundwater ambient level
HLA	Harding-Lawson Associates
HLP	Helicopter Landing Pad
HPAL	Hunters Point ambient levels
HPS	Hunters Point Shipyard
IAS	Initial assessment study
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board
SCRS	Surface Confirmation Radiation Survey
SFDA	San Francisco District Attorney
SFRA	San Francisco Redevelopment Agency
SI	Site inspection
SSEBS	Site-specific environmental baseline survey
SWRCB	State of California Water Resources Control Board
Tetra Tech	Tetra Tech, Inc.
TtEMI	Tetra Tech EM Inc.
UCSF	University of California San Francisco
Uribe	Uribe and Associates
UST	Underground storage tank
YEI	YEI Engineers, Inc.

a List is not exhaustive.

CHAPTER 3

PAST AND CURRENT OPERATIONS

This section discusses the history of HPS and the past and current operations. The base history is divided into two periods: 1776 to 1938, and 1939 to the present. The discussion of past operations focuses on the installation's mission under the Navy. The discussion of current operations focuses on the current and future tenants and their relationships with the property disposal and reuse plan.

3.1 BASE HISTORY

The following sections describe the base history in terms of the two historical periods.

3.1.1 1776 to 1938

The stretch of land occupied by HPS has been part of recorded maritime history since 1775. Title to the land known as Hunters Point dates back to the eighteenth century. In 1776, Juan Manuela de Ayala sailed into the Bay and recorded his finding for the Viceroy of Spain. When the Mission San Francisco de Asis was founded in 1776, this area (then referred to as Point Avisadero) and the inland area known as Point Viejo became mission lands and were used for cattle grazing. By 1849, Robert, John, and Phillip Hunter established residences on the promontory, in the area that is now referred to as Parcel A. Although various legal battles clouded the Hunters' claim to the land, the land bore the name Hunters Point by 1858.

In reviewing the history of HPS, it is important to look at the area in the context of California's tremendous growth during the gold rush. At the height of the gold rush, California's shipping industry strained to meet the rapid expansion. New, larger vessels such as the California Clipper ships were built in the 1840s, and these large ships created a strong demand for dry docks in the San Francisco Bay region.

HPS was advantageous not only in terms of its geography but also because it already had a timber pier and docking facilities in the 1850s. In 1867, the California Dry Dock Company purchased the tip of Point Avisadero to build a dry dock. A 490-foot-long graving dry dock (Dry Dock 1, now a portion of Dry Dock 3) was completed in 1868, with a pumphouse 50 feet from the forward end of the dry dock on the south side. Photographs taken in about 1870 of the northeast corner of Hunters Point show the original dry dock, which was the first dry dock constructed on the West Coast, along with several sheds and

outbuildings within a board fence (Naval Facilities Engineering Command, Western Division [WESTDIV] 1986).

As early as 1871, the Chinese had established shrimp camps at Hunters Point. A map by Roger A. Nash, prepared expressly for the Chinese Historical Society of America Syllabus, shows five Chinese shrimp camps at Hunters Point in 1910. The number of settlements increased to 12 by 1930, most of them located on the northern side of Hunters Point (Olmstead and Olmstead 1980).

By 1900, the San Francisco Dry Dock Company owned the HPS dry dock. This company built a second dry dock in 1903. Dry Dock 2 was the largest dry dock on the West Coast, capable of servicing all classes of ships navigating the Pacific Ocean. A new pumphouse was completed in 1907 to serve both dry docks.

In 1907 and 1908, Hunters Point serviced 23 vessels of the Great White Fleet, a flotilla of vessels dispatched by President Roosevelt on a "round-the-world" cruise as a demonstration of the country's military might (ESA 1987). Access to the existing Navy repair facility at Mare Island at Vallejo, north of San Pablo Bay, was impossible for many of the fleet's larger ships with drafts in excess of local water depths. For this reason, the Great White Fleet vessels were serviced by the then privately owned dry docking facilities at Hunters Point. This necessity made it clear to the Navy that for any expansion of fleet activities in the Pacific, access to a "deep water" repair facility would be necessary.

In 1910, a Navy General Board, appointed to survey the Navy's needs on the West Coast, recommended the construction of a deep water naval repair base on the lower San Francisco Bay. At that time, however, Congress was not inclined to vote on new purchases, and the acquisition of Hunters Point was not pursued. Under terms of a 1916 subsidy contract with the Navy, the Union Iron Works Dry Dock Company began to reconstruct the original Dry Dock 1 into a 1,004-foot-long dry dock, which it redesignated as Dry Dock 3. After 1918, Dry Dock 1 no longer existed as a separate entity. The HPS facility consisted of Dry Dock 2 and the new Dry Dock 3, which included part of the original Dry Dock 1, and was the second largest in the world.

These graving dry docks and ship repair functions were not the only commercial activities that occurred on the point. Fishing enterprises could be found adjacent to both sides of the dry docks. At the turn of the century, the Alaska Codfish Company's packing houses were north of HPS. The Chinese shrimp

camps were adjacent to the docks, each consisting of homes, offices, and warehouses. Lodging houses, saloons, and various local businesses were also located adjacent to the HPS facility.

3.1.2 1939 to the Present

The 76th Congress (1938 to 1940), pressured by a growing concern that the U.S. would become involved in a war, requested that the Secretary of the Navy appoint a board of officers to report on the advisability of acquiring the Hunters Point dry docks. This board recommended that the Navy acquire Hunters Point. The recommendation was incorporated into legislation, HR 878, which was passed by Congress on June 2, 1939.

Two key issues arose during the debate on HR 5766 (which was incorporated into HR 878): the annex designation and the terms of acquisition. In 1939, these issues had a bearing on the viability to the transfer of the land because HPS was then an annex of the Navy's Mare Island facility. Members of Congress questioned the designation of HPS as an annex because they feared it would restrict development. Congress also questioned the terms of acquisition. By this time, Bethlehem Steel (the parent company of Union Iron Works) owned HPS, and the $4 million purchase price offered by the Navy, which was 60 percent of what Bethlehem Steel believed a fair market price, led to lease arrangements giving Bethlehem Steel use of the property.

In 1940, the U.S. Government received title to the land at HPS. Of the property acquired, Dry Docks 2 and 3, two pumphouses, a boiler house, a gate house, and a paint storage building still exist and form a historic district. The development of HPS by the Navy included the purchase of 585 acres of land and all the accompanying construction.

A significant achievement during the World War II period at HPS was the construction of Dry Dock 4, which was used to service and repair naval ships that had sustained battle damage. Designed by naval architect Hugo Frear and built by the Pacific Bridge Company, the construction of Dry Dock 4 began in 1942 and was completed in less than 9 months. Approximately 5 million cubic yards (yd^3) of soil was excavated from the area and deposited as fill north and south of Dry Docks 2 and 3. The soil was used to construct a cofferdam behind which Dry Dock 4 was constructed. Dry Dock 4 has been identified as meeting the criteria for the National Register of Historic Places.

An important historical fact concerns the destruction of the hillsides surrounding HPS. During World War II, the influx of workers created a housing shortage. By 1943, HPS had been authorized by the Navy

to accommodate 4,000 family apartments and 7,500 dormitory units. The hillsides above HPS were carved to accommodate the temporary apartment buildings, and roads were constructed to connect the housing areas to the shipyard. By 1945, the shipyard employment force increased to over 18,000 people.

On November 30, 1945, the facility was redesignated the U.S. Naval Shipyard, Hunters Point, a separate component of the San Francisco Naval Base. From 1945 to 1974, the shipyard was predominantly used as a repair facility by the Navy. Additional acreage, mostly near Double Rock in the South Basin, was acquired in 1957, increasing the size of the shipyard once again (WESTDIV 1986).

In 1946, the Radiological Safety Section, a part of the San Francisco Naval Shipyard Industrial Laboratory, originated at HPS. This section later became known as the U.S. Naval Radiological Defense Laboratory (NRDL) and evolved as a separate command under the auspices of the shipyard in September 1950. The first laboratory building was enlarged by the conversion of Barracks 507 and 510 in 1948. Today all the buildings used by the NRDL have been demolished or are no longer used for radiological purposes.

By 1951, HPS shifted from operating as a general repair facility to specializing in submarines, although the Navy continued to operate it as a carrier overhaul and ship repair facility through the late 1960s. In April 1965, command merged with Mare Island Naval Yard to become the San Francisco Bay Naval Shipyard. On January 31, 1970, the San Francisco Bay Naval Shipyard was divided again into two separate, independent, self-governing shipyards: Hunters Point Naval Shipyard and Mare Island Naval Shipyard (MINS).

Hunters Point Naval Shipyard was deactivated in 1974, and control reverted to the Supervisor of Shipbuilding (SupShip), San Francisco. It remained relatively unused until 1976, when Triple A Machine Shop (Triple A) entered into a lease with the Navy for use of nearly 98 percent of the base, including all of the Dry Dock 4 area. Triple A leased the property from May 1976 to June 1986. During this period, Triple A subleased portions of the property to various other businesses. After the expiration of its lease, Triple A was involved in extensive litigation regarding disposal of hazardous wastes at the site.

In 1986, the Navy resumed occupancy of the base. Under the Pelosi Amendment, many of Triple A's tenants acquired leases with the Navy after the Navy's reoccupancy through legislation by Congresswoman Nancy Pelosi. Many of these tenants still occupy buildings in HPS. From November 1985 to August 1989, the docking and repair of several Navy surface ships occurred. In 1990,

Hunters Point Naval Shipyard came under the jurisdiction of Naval Station Treasure Island (NAVSTA TI), and was redesignated Hunters Point Annex (HPA).

In 1991, the DoD designated HPS for closure pursuant to the BRAC Act, mandating that contamination at HPS be remediated and the property be made available for nondefense use. HPS was designated as a "B" site by the Agency for Toxic Substances and Disease Registry (ATSDR) in 1994, meaning it poses no imminent threat to human health but has the potential to pose a long-term threat to human health (ATSDR 1994).

On March 31, 1994, control of HPS was transferred to NAVFAC, EFA West, located in San Bruno, California.

3.2 PAST AND CURRENT OPERATIONS

Because little is known about operations at HPS prior to the time it was acquired by the Navy, the discussion of past operations focuses on the installation's mission under the Navy. The discussion of current operations focuses on activities at HPS after the base's decommissioning and its occupancy by Triple A.

3.2.1 Past Operations

The initial assessment study (IAS) prepared by NEESA reported that Hunters Point Naval Shipyard was primarily used as an industrial operation for the modification, maintenance, and repair of ships (NEESA 1984). The mission of the shipyard before its decommissioning in 1974 was to provide logistic support for assigned ships and service craft; to perform authorized work in connection with construction, conversion, overhaul, repair, alteration, dry docking, and outfitting of ships and craft, as assigned; to perform research, development, and test work, as assigned; and to provide services and material to other activities and units, as directed by competent authority. To implement mission objectives, the following tasks and functions were assigned to Hunters Point Naval Shipyard:

- Perform authorized ship work in connection with the new construction, conversion, overhaul, repair, alteration, activation, and inactivation of all types of naval ships, including missile ships; perform outfitting of naval ships and service craft
- Design naval ships
- Operate as a planning yard for ship alterations

- Perform research, development, test, and evaluation work, as assigned

- Perform research, development, test, and engineering work on material handling for replenishment-at-sea projects as assigned by Naval Ships Systems Command

- Operate the West Coast Shock Facility to evaluate the design, construction, and operation of combatant ships against attack by non-contact underwater weapons. As assigned, plan and conduct shock tests of shipboard equipment by using the Floating Shock Platform, provide technical support for conducting routine shock tests against operational ships, conduct research and development studies in the shock and vibration area, and perform measurement and analysis of test data

- Provide electronic and weapons engineering services, on request, to Navy and Coast Guard ships in the San Francisco Bay area

- Conduct civilian and military training programs, as required

- Provide accounting, civilian payroll, savings bond, military disbursing, public works, industrial relations, medical, dental, berthing, supply, messing, fire prevention and fire protection, security, and other services to organizational components of the Navy and other U.S. Government agencies, as assigned or as requested by competent authority

- Serve as stock point for designated material controlled by bureaus and offices of the Navy, naval shore (field) activities, and various Defense Supply Centers

- Serve as a material-assembly and planning activity for military alterations authorized to be accomplished by private shipyards on ships undergoing overhaul on the West Coast

- Provide outpatient medial care to Navy and Marine Corps personnel and their dependents attached to the shipyard, tenant activities, afloat units in the shipyard, and retired military beneficiaries resident in the area

- Provide housing facilities, as available, for authorized military and civilian personnel, including ships present

- Provide controls for the procurement, handling, storage, use, and disposal of sources of ionizing radiation, as well as related facilities associated with industrial operations

- Provide industrial support to the Westinghouse Polaris (Trident II) Test Complex

In support of the missions of the base, past activities have generated hazardous and potentially hazardous wastes, including spent petroleum products, solvents, acids, caustics, detergent, paint sludge, sandblast grit, radioactive materials, and various other waste chemicals and liquids. Based on the IAS (NEESA 1984), a majority of the wastes generated at the base in the past were apparently disposed of in the storm drain and sewer systems and in the on-site landfill. Table 3-1 summarizes the history of HPS operations

and hazardous substance generating activities. Table 3-2A provides information on hazardous waste storage, generating, and disposal activities that took place at the base during its primary operational period, from 1942 to 1974, and Navy hazardous materials present at buildings in 1995. Table 3-2A presents information collected during the BER (current through 1993 [Tetra Tech 1994]) and the 1995 VSI. The information is this table had not been verified and is mainly from historical records. Generation rates of hazardous waste listed in the table for some buildings are also from historical records. The annual rates listed for some buildings were extrapolated from the generation rate and certain time assumptions (see "note e" in Table 3-2A). These quantities should not be used with any degree of certainty and it is unknown if they reflect actual past Navy hazardous waste generation quantities. Table 3-3A presents former building uses at HPS, subparcel and parcel cross-references, building number, area (square feet [ft^2]), and past use or building name.

Between 1976 and 1986, Triple A leased HPS. Significant litigation occurred when the City of San Francisco sued Triple A, alleging that it generated and disposed of large amounts of sandblast grit, spent petroleum solvents, acids, and paint sludge. In this litigation, Triple A was accused of illegal disposal of 20 different sites across the facility. These sites were subsequently investigated in the IRP, and are discussed in Section 5.2 and in Appendix G.

3.2.2 Current Operations

Many of the facility buildings have been leased to private tenants and Navy-related entities for maritime and nonmaritime industrial and artistic purposes for more than 10 years. Representative uses include storage space, art studios, machine workshops, woodworking shops, automobile restoration garages, recreational vehicle parking, and filming of movies. In 1993, about 200 workers were employed by small businesses and 400 artists worked in the art studios at HPS (NAVSTA TI 1993). Table 3-2B provides current information (as of November 1997) on hazardous material activities of tenants leasing buildings from the Navy at HPS. The table presents information on the building, tenant, hazardous materials, estimated quantity of hazardous materials, and if the hazardous materials are being stored, have been released, or disposed of off site. Table 3-3B presents currently used buildings at HPS, subparcel and parcel cross-references, building numbers, area (ft^2), current uses, and current tenants.

To increase the economic potential of the Bayview/Hunters Point community and San Francisco in general, EFA West has endeavored to implement interim leases and long-term leases until the HPS facility is transferred to the City of San Francisco. The Navy has entered into several legal arrangements

allowing interim uses of certain base lands and facilities as long as the conditions of the lease ensure that the tenant does not incur unacceptable risks and the Navy has access to the property to conduct necessary environmental cleanup actions. In addition, the Citizens Advisory Committee (CAC), a committee formed in 1991 by Mayor Art Agnos to act as a formal citizen sounding board for land use and redevelopment, has approved several interim land reuse proposals that are in general consistent with the land reuse plan of the City of San Francisco and SFRA. Table 3-4 lists the priority buildings SFRA proposes for reuse.

Currently, a basewide FOSL (excluding Parcel A) is being prepared to document environmental findings for Parcels B, C, D, E, and F at HPS and the suitability of the parcels for the proposed lease in furtherance of conveyance to the City of San Francisco before the parcels are ready for transfer. Additionally, a draft final FOST for Parcel A is being prepared for transfer of Parcel A to the City of San Francisco.

TABLE 3-1

HISTORY OF INSTALLATION OPERATIONS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Period	Type of Operation	Hazardous Substance Activities	Owners
Pre-1800s	Residential and fishing	Unknown	Spanish land grants
1800 to 1840	Residential, fishing, and shipping	Unknown	Jose Cornelio Bernal, John Townsend, and Cornelia de Boom
1840 to 1867	Commercial shipping; Hunters Point had a timber pier and docking facilities	Ship building and repair and dry dock operations; other information is unavailable	Robert, Phillip, and John Hunter
1867 to 1900	Commercial shipping, building, and completion of Dry Dock 1; ship repair; and shrimp fishing and processing	Ship building and repair and dry dock operations; other information is unavailable	California Dry Dock Company
1900 to 1908	Commercial shipping, building, and completion of Dry Dock 2; ship repair; and shrimp fishing and processing	Ship building and repair and dry dock operations; other information is unavailable	San Francisco Dry Dock Company
1908 to 1939	Commercial shipping, building and completion of Dry Dock 3, ship repair, and shrimp fishing and processing	Ship building and repair and dry dock operations; other information is unavailable	Union Iron Works (subsequently purchased by Bethlehem Steel)
1939 to 1941	Dry docks for Navy ships and ship repair	Information is unavailable	Navy (facilities were leased to Bethlehem Steel)
1941 to 1945	Dry docks for Navy ships and building and completion of Dry Dock 4 (which was subsequently a historic site)	Ship building and repair and dry dock operations; other information is unavailable	Navy canceled lease in 1941 and took possession of Hunters Point

TABLE 3-1 (Continued)

HISTORY OF INSTALLATION OPERATIONS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Period	Type of Operation	Hazardous Substance Activities	Owners
1945 to 1974	Dry docks for Navy ships and establishment and administration of the NRDL	Industrial landfill, pickling and plate yard, oil reclamation ponds, machine shops, fuel/oil storage, radiological research operations, maintenance shops, battery overhaul, plating shop, acid mixing plant, sheet metal shop, paint shops, forge shop, foundry, aluminum casting, sandblasting activities and disposal, service stations, electronics shops, pipefitting shop, rigging shops, shipfitting shop, hazardous waste storage areas, automotive shops, Poseidon missile operations, scrap yard, open burn area, and transformer storage yard	Navy
1974 to 1976	Shipyard deactivated and relatively unused during this time	Information is unavailable and minimal base activities	Navy
1976 to 1986	Navy leased most of facility to Triple A; Triple A subleased many buildings to other commercial businesses	Triple A activities were primarily commercial ship repair; City of San Francisco sues, alleging illegal disposal of large amounts of hazardous waste including sandblast grit, spent petroleum solvents, acids, and paint sludge	Navy
1986 to 1990	Navy resumed occupancy of facility but not shipyard operations, many commercial business tenants that were previously on site remained	Under investigation	Navy

TABLE 3-1 (Continued)

HISTORY OF INSTALLATION OPERATIONS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Period	Type of Operation	Hazardous Substance Activities	Owners
1990 to Present	HPS placed on base closure list (1991); HPS placed on NPL (1992); preliminary and remedial investigations and cleanups necessary for transfer of land to public currently in progress. The Parcels A and B RODs have been signed. A basewide FOSL is due to be signed by the Navy and CCSF in mid-1999.	Under investigation	Navy

Notes:

CCSF	City and County of San Francisco
FOSL	Finding of suitability to lease
HPS	Hunters Point Shipyard
Navy	U.S. Department of the Navy
NPL	National Priorities List
NRDL	Naval Radiological Defense Laboratory
ROD	Record of decision
Triple A	Triple A Machine Shop

TABLE 3-2A

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
A	100	Main Electrical Substation	Unknown	Transformers and batteries	Unknown	Unknown
A	101	Reproduction Department and Administrative Office	Blueprint, ozalid, and photo developing	Hydrogen peroxide, ammonia, and photo developer solutions and various chemicals washed off print paper	500 gallons per week/Annual rate[e]: 74,000 kg/yr (18,500 g/yr)	Combined sewer system/D
A	322	NRDL Annex, Marine Guard, and Pass Office	Unknown	Unknown	Unknown	Unknown/drainage area unspecified
A	808	Industrial Storehouse	Unknown	Unknown	Unknown	Unknown/A
A	813	Supply, Storehouse, and Offices	Unknown	Paints, solvents, flammable liquids, oil, and other print shop chemicals	Unknown	Unknown/G
A	815[c] and 816	NRDL	Unknown	Liquid waste, pine tar, oil, distilled water, styrene (Building 816 only)	Unknown	Dumped at sea or hauled away by licensed contractor/A
A	818	Chlorinating Plant	Unknown	Nonflammable gas and poison (chlorine)	Unknown	Unknown/A
A	819	Sewage Pump Station A	Unknown	Oils and paint	Unknown	Unknown/A
A	821	X-Ray Shield Facility Substation		Compressed gases	Unknown	Unknown/A
A	901	Commissioned Officers' Mess	Sandblast filling	White powder, asbestos, gas cylinder, cleaner, paint, and sandblast fillings	Unknown	Unknown/D
A	906	Gardening Tool House	Landscape maintenance	Pesticides	Unknown	Unknown/B
A	None	Parcel A Groundwater	Unknown	Motor oil	Unknown	Unknown/A, B, D, and G
B	104	National Reserve Armory	Unknown	Unknown	Unknown	Unknown/B
B	109	Police Station	Unknown	Oil and PCBs	Unknown	Unknown/B

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
B	111(d) and 112(d)	Diesel and Lubrication Oil Pumping Plant	Draw-off from oil separator units and washdown of spillage	Emulsifying agent during washdown, waste oil, lubrication oil, and diesel	2,000 gallons per month/Annual rate[e]: 96,000 kg/yr (24,000 g/yr)	Oil reclamation plant and storm sewer system/B
B	113	Salvage Diver's Shop	Salvage operations	Waste metal equipment, oils, and sulfur hexafluoride	1,000 lbs. per week/Annual rate[e]: 16,700 kg/yr	Scrap yard and landfill/B
B	113A	Tug and Submarine Maintenance Shop (also Machine Shop, Torpedo Maintenance Shop, and Electrical Substation)	Unknown	Waste metal equipment	Unknown	Scrap yard and landfill/B
B	114	Office Building	Unknown	Corrosives, hydrocarbons, PCB-contaminated oil, kerosene, and x-ray developing chemicals	Unknown	Unknown/B
B	115 and 116	Office and Training Building	Unknown	Acetylene (Building 115) dry-joint compound	Unknown	Unknown/B
B	118	Mess Hall and Submarine Bachelor Officer Quarters	Unknown	Unknown	Unknown	Unknown/B
B	119(d)	COMSUB CPO Barracks	Unknown	Hydraulic fluids, oil, and glues, and paints and solvents	Unknown	Unknown/B
B	121	Civil Training Center	Unknown	Paint adhesives, oils, glazing compound, sealer, nonflammable gas, and spill kit	Unknown	Unknown/B
B	122	Electrical Substation and Compressor Plant	Unknown	Batteries	Unknown	Unknown/B

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
B	123	Battery Overhaul	Discharge of electrolyte from batteries to be reconditioned	Used electrolyte (sulfuric acid and distilled water) and soda ash (neutralizer)	100 gpm when electrolyte was discharged	Storm sewer system/B and C
		Electroplating Shop	Electroplating, paint stripping, processes associated with irridite and Parko-composition chemical solutions	Cyanide plating solutions (cadmium, copper, and silver); acid plating solutions (chrome, brass, gold, lead, nickel, and tin); other chemical solutions (Penetrol X, irridite, and Parko-composition); and acid solutions (chromic, fluoroboric, muriatic, nitric, phosphoric, and sulfuric); and batteries and metals	20 gpm	
B	124(d)	Acid-Mixing Plant	Washdown of spilled acid and draining of acid tanks	Sulfuric acid and distilled water (combined to form electrolyte for storage batteries)	1,000 gallons per month of washdown water/Annual rate[e]: 48,000 kg/yr (12,000 g/yr)	Storm sewer system/B
B	125	Submarine Cafeteria	Unknown	Unknown	Unknown	Unknown/C
B	128	Machine Shop	Unknown	Oil, solvents, corrosives, and hydrocarbons	Unknown	Unknown/C
B	130	Machine Shop, Metal Working Shop, and Pipefitters Shop	Poor housekeeping practices	Waste oil, solvents, paints, acids, MEK, and toluene	Unknown	Unknown (possibly disposed of in two sumps in building)/D
B	140		Unknown	Hydraulic oil	Unknown	Unknown
B	141	Dock Shipwright's Shop	Unknown	Unknown	Unknown	Unknown/D
B	145	Saltwater Pumphouse	Unknown	Unknown	Unknown	Unknown/B

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
B	146	Photo Development Laboratory and TACAN Facility	Unknown	Chlorinated solvent, oil containing PCBs, paints, and resins	Unknown	Sump outside building/B
B	156	Rubber Shop	Manufacture rubber parts	Paints, solvents, and hydrocarbons	Unknown	Unknown (sump inside building/D
B	157	Nondestructive Testing Laboratory	Metal fabrication and welding	Oil, paints, sandblast waste, chlorinated solvent, and orthophosphoric acid	Unknown	Unknown/B
B	161 and 162	Maintenance Service Center and Paint Storage	Unknown	Unknown	Unknown	Unknown/B
B	None	Dry Docks 5, 6, and 7	Unknown	TCE (Dry Dock 6 only)	Unknown	Unknown/B and C
B	None	Tank Farm (Fuel Distribution Lines)	Unknown	Unknown	Unknown	Unknown/B
B	None	Subbase Area	Unknown	Unknown	Unknown	Unknown/drainage area unspecified
B	None	Area XIV, North Of Dry Dock 3	Unknown	Chlorinate solvents and PCB-contaminated oil	Unknown	Unknown/D
B	None	Waste Oil Disposal Site Behind Building 916	Unknown	Unknown	Unknown	Unknown/drainage area unspecified
C	134	Machine Shop, Q&RA Office, and Central Tool Room	Engine parts cleaning and draining of chemical and rinse tanks	Chemical solution tanks: (1) Penesolve 814 (2) Penestrip CR	1 gpm	Combined sewer system and landfill/D
C	154	Unknown	Unknown	Car battery	One	
C	203	Main Power Plant	Boiler blowdown and backwash from zeolite water softeners	Softeners: dilute sulfuric acid, salt solution, asbestos, xylene, paint, and natural gas combustion products	5,000 gallons per month; 1,500 gallons 10 times per month backwash/Annual rate[e]: 203,000 kg/yr (180,000 g/yr)	Combined sewer system/ E and F

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
C	205	Pump and Compressor Plant	Unknown	Paints, solvents, oil, and sulfuric acid	Unknown	Unknown/E
C	206	Electrical Substation and Compressor Plant	Unknown	Unknown	Unknown	Unknown/E
C	208	Shop Service	Unknown	Unknown	Unknown	Unknown/E
C	211	Machine and Electronic Test and Repair Shop	Paint stripping, painting, and paint sludge	Sodium hydroxide, D-Floate, Steam-Kleen compound, various paints, and paint sludge	0.5 gpm	Combined sewer system and landfill/E
C	215	Fire House	Washing of apparatus	Detergent, oil and grease, paint, solvents, diesel, and gasoline	300 gpd/Annual rate[e]: 312,000 kg/yr (78,000 g/yr)	Combined sewer system and landfill/E
C	217	Sheet Metal Shop	Spray painting	D-Floate, various paints, paint sludge, hydraulic oil, lubrication oil, acetylene, ethylene glycol, and propane	1 gpm; 300 gallons twice per month/Annual rate[e]: 28,800 kg/yr (7,200 g/yr)	Combined sewer system/F
C	219	Electrical Substation	Unknown	PCB-contaminated oil and petroleum hydrocarbons	Unknown	Landfill and combined sewer system/E and F
C	228	Central Cafeteria	Unknown	Latex hardener and adhesives	12 pallets of 1-gallon containers	Unknown
C	229	Electrical Substation	Unknown	Unknown	Unknown	Unknown
C	230	Machine Shop	Unknown	Polyurethane	11 55-gallon drums	Unknown
C	231	Machine Shop	Cleaning facility	Chemical solution tanks: (1) Sulfuric acid – 1 (2) Phosphoric acid – 1 (3) Sodium hydroxide – 3 (4) Dichlorobenzene – 2	2 gpm; 5,000 gallons rinse water once per week; 3,000 gallons chemical solution once per month/Annual quantity: 884,000 kg/yr (221,000 g/yr)	Combined sewer system/E

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
C	231 (Cont.)	Machine Shop (Cont.)	Backwash from water demineralization plant and boiler blowdown	Anion softeners (caustic solution), cation softeners (sulfuric acid solution), solvents, waste oil, batteries, diesel fuel, and drill cuttings	2,000 gallons per month; 3,000 gallons 4 times per month (anion softeners); and 1,500 gallons 7 times per month (cation softeners)/Annual rate[e]: 1,176,000 kg/yr (294,000 g/yr)	Combined sewer system and landfill/E
C	232	Bus Shelter	Unknown	Unknown	Unknown	Unknown
C	241	Forge Shop and Foundry	Unknown	Oil	One 55-gallon drum	Unknown
C	251	Industrial Relations and Central Tool Room	Unknown	Solvents, freon, carbon tetrachloride, and TCE	Unknown	Unknown
C	252	Bus Terminal	Unknown	Carbon dioxide (refrigerant)	6 cylinders	Unknown
C	253 (1st floor)	Ordnance Shop	Cleaning, paint stripping, and steel painting	Sodium hydroxide, stoddard solvent, Steam-Kleen, and various paints	2 gpm and 3,000 gallons chemical solution tank 4 times per year/Annual rate[e]: 48,000 kg/yr (12,000 g/yr)	Combined sewer system/E
C	253 (2nd, 4th, and 5th floors)	Electronic and Optical Shop	Cleaning, paint stripping, and aluminum and steel painting	Sodium hydroxide, Oakite aluminum cleaner 164, various paints, stoddard solvent, and Steam-Kleen	2 gpm and 300 gallons chemical solution tank once per month/Annual rate[e]: 14,000 kg/yr (35,000 g/yr)	Combined sewer system and landfill/E
C	258	Pipefitters Shop and Scrap Yard North Of Building 258	Draining of chemical and rinse tanks	Chemical solution tanks: (1) Muriatic acid (2) Sodium hydroxide (3) Sulfuric acid (4) Chromic acid (5) Sodium hydroxide and Penesolve 814 (6) Penestrip CR and batteries	2 gpm and 6,000 gallons per week/Annual rate[e]: 888,000 kg/yr (444,000 g/yr)	Combined sewer system/E
C	270	Paint Shop	Paint bucket cleaning	Sodium hydroxide, used paint buckets, and car batteries	100 gpd and 3,000 gallons chemical solution tank 4 times per year/Annual rate[e]: 48,000 kg/yr (12,000 g/yr)	Combined sewer system/E

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
C	271	Paint Shop	Spray painting	D-Kleen, paint sludge, and various paints	300 gallons once per week/ Annual rate[e]: 44,400 kg/yr (11,100 g/yr)	Landfill/E
C	272	Riggers and Laborers Shop	Chain hoist cleaning	Steam-Kleen	100 gpd/Annual rate[e]: 104,000 kg/yr (26,000 g/yr)	Combined sewer system/E
C	273	Electrical Substation	Unknown	Unknown	Unknown	Unknown/E
C	275	Sheet Metal Annex and Aluminum Casting	Unknown	Aluminum oxide fines, casting sand containing cyanide, metal, petroleum hydrocarbons, and grease	Unknown	Unknown/E and F
C	278	Storage	Unknown	Unknown	Unknown	Unknown/E
C	279	Materials Storage Rack	Unknown	Unknown	Unknown	Unknown/E
C	280	Aluminum Cleaning Facility	Aluminum cleaning	Chemical solution tanks: (1) Sodium phosphate tribasic (2) Wyandotte 2787 deoxidizer (no neutralization)	0.5 gpm; 5,000-gallon rinse tank once per month; trisodium tank once per week; and Wyandotte tank once every 6 months/Annual rate[e]: 240,000 kg/yr 60,000 g/yr)	Combined sewer system/F
C	281	Electronics-Weapons-Precision Facility	Unknown	Anion and cation softeners and metal	Unknown	Unknown (possibly into large sump/vat inside building)/E
C	282	Abrasive Blast Facility	Sandblasting	Sandblast material	Unknown	Unknown/E and F
C	None	Berth 2	Unknown	Unknown	Unknown	Unknown/E
C	None	Dry Dock 4	Unknown	Unknown	Unknown	Unknown/F and I
D	274	Decontamination Training	Unknown	One drum labeled "hazardous waste drill cuttings"	Unknown	Unknown/G
D	302	Transportation Shop	Transportation equipment cleaning	Decarbonizer, degreaser, detergent, waste solvents, oil, and grease	1 gpm	Combined sewer system and landfill/G

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	302A	Transportation Shop Annex and Painting and Sandblasting Company	Vehicle repair, sandblasting, and painting	Waste petrochemicals, paint, and sandblasting waste	Unknown	Unknown; possibly storm drains/G
D	304	Service Station and Painting and Sandblasting Company	Unknown	Oily product labeled "Drinking Water"	Unknown	Unknown; possibly sewer system/G
D	306	Electrical Substation	Unknown	Degreaser, sweeping compound, and batteries	Unknown	Unknown/H
D	307	Electronic Assembly Facility and Storage	Unknown	Unknown	Unknown	Unknown (geophysical and excavation investigation revealed no vault)/A
D	308	Saltwater Pumphouse	Unknown	Unknown	Unknown	Unknown/I
D	313 and 313A	NRDLs	Unknown	Unknown	Unknown	Unknown/G
D	323	Shore Activities, Electronics, and Boat Shop	Unknown	Unknown	Unknown	Unknown/H
D	324	Carbon Dioxide Refilling Station	Unknown	Unknown	Unknown	Unknown/H
D	351	Electronics Shop	Photo reproduction and developing	Ammonium thiosulfate, silver, salt, acetic acid, sodium sulfite, sodium carbonate, minute quantities of cyanide, various chemicals washed off print paper, and paint	30 gpm and 200 gallons per week from chemical solution trays/Annual rate[e]: 29,600 kg/yr (7,400 g/yr)	Combined sewer system/ G and H
			Cleaning and painting electronic equipment	Chem-mist detergent and very small quantities of alcohol and TCE	1 gpm	

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	351A (352)	Electronics Shop	Electronic equipment cleaning	Chem-mist detergent and small amounts of thinner and solvent	100 gpd/Annual rate[e]: 104,000 kg/yr (26,000 g/yr)	Combined sewer system/ G and H
D	363	Woodworking Shop	Unknown	Unknown	Unknown	Unknown/G and H
D	364	Radiological Research Operations - Chemistry	Unknown	Radioactive sources	Unknown	Disposed of at sea or hauled away by licensed contractor (sump in back)/H
D	365	Storage Building	Unknown	Unknown	Unknown	Unknown/H
D	366	Boat Plastic Shop	Painting and washing	Epoxides, polyester resin, and MEK	Unknown	Combined sewer system/ G and H
D	368	Pipefitting Shop	Unknown	Oil	Unknown	Unknown/G
D	369	Rigging Shop	Unknown	Unknown	Unknown	Unknown/G and I
D	372	Prefab Decking Shelter	Unknown	Steam-Kleen compound	Unknown	Possibly in landfill/ G and I
D	377	Poseidon Systems Test Engineering Building	Unknown	Unknown	Unknown	Unknown/J
D	378	Latrine	Unknown	Cleaning supplies	Unknown	Unknown/J
D	379	Poseidon Engineering Control Building	Unknown	Degreaser (one spray can)	Unknown	Unknown/J
D	380	Poseidon Partial Full Test Machine	Unknown	Unknown	Unknown	Unknown
D	381	West Coast Shock Test Facility	Unknown	Unknown	Unknown	Unknown
D	382	Poseidon Arresting Engine Shelter	Unknown	Unknown	Unknown	Unknown

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	383	Poseidon Shipping and Receiving	Unknown	Unknown	Unknown	Unknown
D	384	Poseidon	Unknown	Ultra foam (fire-fighting foam)	2 pallets of 41-lb. containers and one 55-gallon drum	Unknown
D	385	Poseidon Building	Unknown	Motor oil, acetylene, oxygen, and one bin of drill cuttings	Unknown	Unknown
D	401	Public Works Shop	Unknown	Unknown	Unknown	Unknown
D	407	Office and Storehouse	Unknown	Waste oil	Unknown	Unknown/A and H
D	408, 409, and 410(d)	Furnace Shelter, Welder Motor, and Generator Hut	Unknown	Acetylene or carbon dioxide (Building 408) and oily rubbish (Buildings 409 and 410)	Unknown	Unknown/H
D	411	Shipfitting Shop	Pickling of structural steel and draining of rinse water tanks	Chemical solution tanks: (1) Sulfuric acid, sodium chloride, and inhibitor (2) Sodium dichromate and phosphoric acid	15,000-gallon rinse water tank once per month and each 15,000-gallon chemical tank 4 times per year (number of tanks unknown)	Combined sewer system/H
			Pickling of structural aluminum and draining of rinse water and chemical tanks	Chemical solution tanks: (1) Wyandotte M.F. acid and Altrex Cleaner (2) Wyandotte 2487 acid	5 gpm and 7,500 gallons per month/Annual rate[e]: 360,000 kg/yr (90,000 g/yr)	
			Sandblasting	Spent sandblasting waste and sand containing paint, scrapings, and rust	1 gpm and 190 tons per week	Bay fill and landfill
D	417	Acetylene Manifolding and Welding Engineering	Unknown	Unknown	Unknown	Unknown/H
D	418	Q&RA Welding and Engineering Facility and Metal Spray	Unknown	Unknown	Unknown	Unknown/H
D	419	Oxygen Converter Building	Unknown	Unknown	Unknown	Unknown/G

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	420	Oxygen Cylinder Charging	Unknown	Acid and zinc chromate primer	15,000 gpm acid-contaminated rinse water/Annual rate[e]: 720,000 kg/yr (180,000 g/yr)	Unknown
D	421	Oxygen Control Shop	Unknown	Diesel, citri-solve cleaners, surfactants, and sands with hydrocarbons	55-gallon containers and 5-gallon containers, 10 drums (sands with hydrocarbons)	Unknown
D	422 and 423	PPY and Office and Latrine, Compressor Hut, and Paint Storage	Industrial metal finishing and painting	Acid and zinc chromate-based corrosion-resistant primer	15,000 gallons per month acid-contaminated rinse water/Annual rate[e]: 720,000 kg/yr (180,000 g/yr)	Storm drain or sewer system/H
D	424	Area Time House	Unknown	Unknown	Unknown	Unknown/H
D	435	Equipment Storage Building	Spray painting	Various paints, paint thinner, and paint sludge	200 gpd and 300 gallons once per week/Annual rate[e]: 44,400 kg/yr (11,100 g/yr)	Combined sewer system/H
D	436	Material Storage Building	Garbage can washing	Sodium hydroxide, detergent, paints, solvents, oil, plastic cement, and transmission fluid	2 gpm and 500 gallons twice per year/Annual rate[e]: 4,000 kg/yr (1,000 g/yr)	Combined sewer system and landfill/G
D	437	Pipe Storage	Unknown	Paints and lacquer	Unknown	Unknown/G
D	438	Metal Spray Shelter	Sandblasting	Sandblast material, paint, and solvent material	Unknown	Unknown; possibly storm drain or sewer system/H
D	439	Sheet Metal Shop	Unknown	Chlorinated solvents, PCBs, copper, naphthenate, and waste oil	Unknown	Unknown/A and H
D	500	CPO Barracks	Unknown	Gasoline	Unknown	Unknown/A
D	503	Ships Barracks	Unknown	PCB spill area	Unknown	Unknown/A and H
D	505	Navy Exchange	Unknown	Batteries	Unknown	Unknown/A

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	517	Marine Storage	Unknown	Unknown	Unknown	Unknown/A
D	519	Chapel and Religious Center	Unknown	Unknown	Unknown	Unknown/A
D	523	Saltwater Pumphouse	Unknown	Waste oil	Unknown	Unknown/A
D	525	Storehouse	Unknown	Chlorinated solvents, waste solvents, and PCBs	Unknown	Unknown/A
D	526	Storehouse and Offices	Unknown	Enamel paint	5 gallons	Unknown
D	530	Automotive Hobby Shop	Car washing and automotive repair	Detergent	Unknown	Combined sewer system/A
D	606	Shore Intermediate Maintenance Activity (built in 1989 in area occupied by Buildings 501 through 503, 507, and 508)	Unknown	Unknown	Unknown	Unknown/A and H
D	704	Transportation Shop Shelter	Auto body repair	Unknown	Unknown	Unknown/A
D	709	Navy Exchange Gas Station	Unknown	Petroleum products (seven tanks)	Unknown	Unknown/A
D	710	Latrine	Unknown	Transmission fluid	5-gallon bucket	Unknown/A
D	None	Area West of Building 405	Unknown	Unknown	Unknown	Unknown/A
D	None	Metal Shed near Building 523	Unknown	Unknown	Unknown	Unknown/A
D	None	Area to the northeast of S-308	Unknown	Unknown	Unknown	Unknown/A and H
D	None	Regunning Pier	Unknown	Unknown	Unknown	Unknown/J and H

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
D	None	Container Storage Site near Buildings 525 and 526	Unknown	Unknown	Unknown	Unknown/A
D	None	Area bounded by Manseau, Moreell, and "E" Streets	Unknown	Unknown	Unknown	Unknown/G, H, and I
D	None	Drum Storage and Disposal Site	Unknown	Unknown	Unknown	Unknown/A
D	None	Crane Storage Yard (Corner Of Manseau and Cochrane Streets)	Unknown	Unknown	Unknown	Unknown/H
E	371	Equipment Storage	Unknown	Unknown	Unknown	Unknown/A
E	400	Ships Operational Activity Parts Receiving Storehouse	Unknown	Oil, grease, PCBs, and acetylene	One 55-gallon drum and one 5-gallon drum	Unknown
E	404 and 404A	Storehouse and Sheet Metal Fabricator	Unknown	Unknown propane (Building 404A), paints, and machine oil	Unknown	Unknown/A and H
E	405	Storehouse	Unknown	Solvents, hydrocarbons, oil, formaldehyde, chlorine, and propane	Unknown	Unknown/A
E	406, 413, and 414	Storage Buildings	Storage, automobile repair, and repainting	Unknown	Unknown	Unknown/A

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
E	506, 507, 508, 509, 510, and 510A	Radiological Research Operations – Radiochemistry, Biological Laboratory, Health Physics Office, and Biology, Physics, and Naval Ordnance Laboratory	Unknown	(1) Contaminated buildings cleaned and wastes placed in 55-gallon drums (2) In 1950s, received radioactive material from UC Berkeley and Lawrence Livermore Laboratory (3) Radioactive liquids	Total = about 150 barrels radioactive waste per year handled, stored, and transported off site between 1950 and 1959	(1) Stored, then barged out to sea (Farallon Islands) and dumped; barrels encased in concrete; (2) trucked to Berth 15, temporarily stored in 55-gallon drums, and barged out to sea for disposal near Farallon Islands; and (3) hauled away by licensed contractor Between 1960 and 1969, all liquid and solid radioactive waste removed by licensed contractor to an approved AEC landfill. Some wastes stored in Building 364 and Area 707/A.
E	511A	Woodworking Hobby Shop	Unknown	Unknown	Unknown	Unknown/A
E	521 and surrounding area	Power Plant	Unknown	Large batteries	Unknown	Unknown/A
E	524(d) and 803	Commissary Storehouse and Commissary	Unknown	Kerosene, gasoline, diesel, and IDW	Unknown	Unknown/A
E	518, 520, and 529	Movie Theater, Dental Clinic, and DPO Tape Vault	Unknown	Unknown	Unknown	Unknown/A
E	527	Substation	Unknown	Unknown	Unknown	Unknown/probably A
E	702	Substation	Unknown	Unknown	Unknown	Unknown/A

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
E	707	NRDL - Animal Colony	Disinfection and odor control	Detergent, wastewater, paint, and adhesives	Unknown	Unknown; radiological wastes stored near building (concrete pad)/A
E	708	NRDL - Bio-Med Facility	Unknown	Batteries	Unknown	Unknown/A
E	709	Gas Station	Unknown	Petroleum products, waste oil, and degreasers	7 tanks	Unknown
E	710	Toilet	Unknown	Transmission fluid	One 5-gallon bucket	Unknown
E	807(d)	Scrap Yard Shed	Unknown	Unknown	Unknown	Unknown/A
E	810	Storehouse	Unknown	Tarry substance	Unknown	Unknown/A
E	811	Service Station	Unknown	Unknown	Unknown	Unknown/A
E	815	NRDL Main Laboratory	Unknown	Radioactive material	Unknown	Unknown
E	820	Radiation Laboratory Cyclotron	Unknown	Unknown	Unknown	Unknown/A
E	830[c] and 831	Navy Biological Laboratory (Kennels)	Unknown	Unknown	Unknown	Unknown/A
E	None	Disposal Trench and Salvage Yard	Unknown	Unknown	Unknown	Unknown/A
E	None	Asphalt Batch Plant northwest of Pier 2	Unknown	Unknown	Unknown	Unknown/A
E	None	Industrial Landfill and area southwest of Building 810	Unknown	Unknown	Unknown	Unknown/part of A
E	None	Bayfill Area, Burn Disposal Area, and Tanks S-505	Unknown	Unknown	Unknown	Unknown
E	None	Oily Waste Pond and Incineration Tank	Unknown	Unknown	Unknown	Unknown/A
E	None	Fuel Distribution Lines	Unknown	Unknown	Unknown	Unknown/A

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Facility	Waste Generation Process	Hazardous Wastes Generated	Generation Rate or Quantity	Disposal/ Drainage Area[b]
E	None	Area VII Railyard southwest of Crisp Avenue	Unknown	Unknown	Unknown	Unknown/A
E	None	Pier 2	Unknown	Unknown	Unknown	Unknown
E	None	Old Transformer Storage Yard	Unknown	Unknown	Unknown	Unknown/A
E	None	Oil Reclamation Ponds	Gravity separation in open ponds	Fuels reclaimed: bunker oil, lubrication oil, and diesel oil; Chemicals used: Dunkit (degreaser), Slix, Gamlen, and Clock 06-39 (oil classification)	14,000 gpd and 1,000,000 gallons per year/Annual rate[e]: 4,000 kg/yr	Reclaimed oily wastewater to Bay
Site Wide	N/A	Steam Lines[d]	Unknown	Unknown	Unknown	Unknown
Site Wide	N/A	Storm Drains and Sanitary Sewer Lines	Unknown	Unknown	Unknown	Unknown
	N/A	Former Transformer Sites	Unknown	Unknown	Unknown	Unknown
Site-Wide Waterfront Area	N/A	Berths and Dry Docks	Ship overhaul	Luminescent radium dials	6,000 lbs. over 25 years/Annual Rate[e]: 108 kg/yr (240 lbs./yr)	Landfill
Off-Base Property	N/A	Railroad Right-Of-Way	Direct public access	Paint, resin, oil, automotive parts, and refuse and debris	Unknown	Unknown/drainage area unspecified

Notes:

(d) Demolished
g/yr Grams per year
gpd Gallons per day
gpm Gallons per minute
IDW Investigation-derived waste
kg/yr Kilograms per year
lbs. Pounds
MEK Methyl ethyl ketone
NA Not available

TABLE 3-2A (Continued)

NAVY HAZARDOUS WASTE STORAGE AND GENERATING ACTIVITIES 1942 TO 1995[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Navy	U.S. Department of the Navy
NRDL	Naval Radiological Defense Laboratory
PCB	Polychlorinated biphenyl
TACAN	Tactical Air Navigation
TCE	Trichloroethene

a This table lists historical information on sites where the Navy has generated wastes in the past. Information in this table has not been verified and should be used for limited purposes.

b Drainage area information was obtained from Harding Lawson Associates (HLA) 1994g and can be correlated with Table 5-1.

c Buildings 815 and 830 are formerly used defense sites.

d Between 1976 and 1986, portions of the steam line system may have been used by a tenant of the Navy's to transport waste oils containing PCBs.

e The annual rate is an extrapolated quantity based on historical information and may or may not reflect actual past Navy hazardous waste generation quantities. Annual rate assumptions: 8-hour day, 260-day work year (37 weeks) and 1 gallon equals 4 kilograms (H_2O).

References:

1. NEESA. 1984.
2. PRC. 1993b.
3. PRC. 1994b.
4. PRC. 1996b.
5. PRC. 1997b.
6. HLA. 1990.
7. Tetra Tech. 1994.

TABLE 3-2B

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
A	101	J. Terzian	Paints	1375	S
			Solvents	577.3	
			TPH	114.6	
			Adhesives/Sealants	98.02	
			Aerosol sprays, miscellaneous	6.8	
			Photochemical solutions	95	
			Stains, water-based	10.2	
			WD-40	0.57	
A	110	J. Terzian	Paints	105.6	S
			TPH	1.7	
			Photochemical solutions	34.5	
A	808	Precision Transport	TPH	272	S
A	916	Dago Mary's Restaurant	Cleaning products	37.4	S
B	103	J. Terzian	Paints	95.5	S
			Solvents	124.1	
			TPH	34	
			Solutions	102	
			Powder colorant	0.10	
			Fiber reactive dyes	0.57	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
B	114	Smith-Emery, Co.	Solvents	27.55	S
			TPH	1,201.8	
			Acids	4.75	
			Ammonium	0.55	
			Cupric sulfate	0.45	
			Ferric chloride	0.45	
			Magnaflux magnetic powder	34	
			Sodium hydroxide	1.7	
			WD-40	6.8	
B	115	Finish Works	Solvents	27.2	S
			TPH	3.4	
			Coating/sealants	10.2	
B	116	Frame Works	Paints	74.8	S
			Solvents	41.2	
			TPH	4.5	
			Acids	0.8	
B	117	J. Terzian	Paints	69.7	S
			Solvents	63.05	S

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
B	117 (Cont.)	J. Terzian (Cont.)	TPH	27.2	S
			Adhesives/sealants	5.1	S
			Colorants	40	
			Xtender	27.2	
B	120	Police Athletic Club	Paints	13.6	S
			TPH	170	
			Swimming pool cleaners	15.4	
			Corrosives	17	
B	125	Bridenthal Cabinetry	Paints	12.5	S
			TPH	85	
B	128	CCSF DEA	ZEP Flash floor cleaner	17	S
C	134	Odaco, Inc.	Paints	10.2	S
			Solvents	197.2	
			TPH	309.3	
			Cleaning products	57.8	
			Refrigerant	205.7	
			Corrosives	17	
C	211	DOT, Maritime Administration	TPH	51	S

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
C	230	Ermico Enterprises	Solvents	85	S
			TPH	425	
			Adhesives/sealants	5.1	
			K-4 Catalyst	51	
C	275	Ermico Enterprises	TPH	2,924	S
			Detergents	382.5	
			Santrol 35	187	
C	301	Astoria Metals	TPH	694	S
			Adhesives/sealants	34	
			Antifreeze	561	
C	367	Astoria Metals	TPH	1,250	S
C	372	Astoria Metals	TPH	5,610	S
			Lead[b]	15,910	
C	Dry Dock 4[c]	Astoria Metals	TPH	7,924	S
			Adhesives/sealants	68	
			Asbestos[b]	13,636	
D	302	Golden Gate Railroad Museum	TPH	462.3	S
			Corrosion inhibitor	374	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	323	J. Terzian	Paints	34.7	S
			Solvents	13.6	
			TPH	107.2	
D	363	Quality Craftsman	Solvents	102	S
			TPH	37.3	
D	364	Young Laboratories	Solvents	6.8	S
			Paints	6.8	
			Acids	87.8	
			Ammonium	6.8	
			Ether	0.85	
			Lead	4.8	
			Potassium cyanide	0.1	
D	366	Christian Engineering	Paints	34	S
			Solvents	82.62	
			TPH	666.4	
			Heat transfer fluid	17	
			Antifreeze	10.2	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	366	J. Terzian	Paints	22.84	S
			Solvents	91.18	S
			TPH	268.7	S
			Antifreeze	3.4	S
D	401	DiPaolo and Barber	Paints	61.2	S
			Solvents	3.4	
			TPH	10.2	
D	401	James Heagy	Paints	6.8	S
			Solvents	106.8	
			TPH	1,090.2	
			Acids	10.2	
			Ammonia	51	
			Isopropyl alcohol	6.8	
			Printing ink	3.4	
D	401	Patricia Powers	Paint	12.5	S
			TPH	6.8	
D	401	West Edge Design	Solvents	151.3	S
			TPH	119	
			Corrosives	104.4	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	402	Vacant	TPH	680	S
D	404	Mina Metals	Paints	15	S
			Solvents	30.7	
			TPH	630.9	
			Adhesives/sealants	1,710	
			Corrosives	7.6	
D	407	American Van Lines	TPH	34	S
D	411	Eric Landsdown – The Dollhouse	Paint	17	S
			Solvents	28.2	S
			TPH	23.8	S
D	411	Sierra Western Equipment	Paint	61.2	S
			TPH	2,108	
D	418	Hydro-Chem Services	Paint	10.2	S
			TPH	175.1	
D	435	J. Terzian	Paint	3.4	S
			TPH	3.4	
D	435	West Edge Design	Solvents	34	S
			TPH	84.6	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	606	SFRA (Police)	Solvents	2.0	S
			TPH	566.1	
			Antifreeze	13.6	
E	371	S&W Productions	Paint	6.8	S
			Solvents	3.4	
			TPH	95.2	
			Adhesives/sealants	13.6	
E	405	Clean Comp	Paint	13.6	S
			TPH	60.7	
E	406	B&A Bodywork/Towing	Paints	68	S
			Solvents	10.08	
			TPH	414.55	
E	413	American Van Lines	TPH	34	S
E	704	Wagner Construction	Solvents	37	S
			TPH	1,305.6	
			Antifreeze	10.2	
			Starting fluid	1.8	

TABLE 3-2B (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
E	809	Golden Gate Railroad Museum	Paints	51	S
			TPH	17,854	
			Adhesives/sealants	6.8	
			Antifreeze	10.2	
			Hydraulic fluid (fire resistant)	17	
			Starting fluid	13.6	

Notes:

D Disposed
kg Kilogram
R Released
S Stored
TPH Total petroleum hydrocarbons

a Quantities of hazardous materials and TPH present at buildings were calculated based on the following assumptions: (1) all substances listed in Appendix H are hazardous materials, (2) all hazardous materials listed in Appendix H are pure substances, and (3) all hazardous materials have been converted to kg based on 1 gallon equals 3.4 kg. Based on 1 and 2, the quantities are over estimated.

b Hazardous material exceeds Comprehensive Environmental Response, Compensation, and Liability Act reportable quantity (Code of Federal Regulations 40 Section 302.4).

c A review of Astoria Metals Corporation's records indicated that a diesel spill was cleaned on April 3 and 4, 1997, on the north side of Dry Dock 4. Absorbants were used to soak up the diesel and contaminated soil was removed.

d Sometime in 1996, an unknown spill of diesel from a 55-gallon drum on a truck occurred. The drum did not belong to the tenant. The truck was removed, but it is unknown if the release was cleaned up.

Source:

Compiled from Appendix H.

TABLE 3-3A

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
A (N-1)	19	8,848	Apartment Building
A (N-1)	100	150	Main Electrical Substation for Navy Power
A (N-17)	101	119,800	Administration Office, Blueprint Shop
A (H-OS)	102	16,954	Old Post Office
A (N-17)	110	20,502	Marine Barracks
A (H-51)	158	30	Sentry House – Main Gate
A (H-51)	322	858	Security Guard and Pass Office
A (S-46)	808	45,766	Industrial Storehouse
A (S-47)	813	276,916	Supply Storehouse, Offices
A (H-48)	816	6,134	NRDL High Voltage Accelerator/Laboratory
A (H-48)	817A	30	Sentry House – Outside Gate
A (H-48)	818	204	Chlorination Plant
A (S-47)	819	1,265	Sewage Pump Station A
A (S-46)	821	971	X-Ray Shield Facility, Substation Shield
A (S-46)	823	400	Sewage Pump Station
A (H-OS)	901	15,134	Officer's Club
A (H-53)	906(d)	672	Gardening Tool House
A (H-55)	908	1,743	Former Car Garage

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
A (H-51)	915	1,790	Bank
A (N-3)	916	9,304	CPO Mess, Package Liquor Store
A (N-1)	917(d)	Unknown	Store
A (H-57)	921	40,000	Bachelors Officers' Quarters
A (H-56)	None	N/A	Parking Lot
A (H-49)	Residential Units	Unknown	Residential
A (H-50)	Residential Units	Unknown	Residential
A (H-52)	Residential Units	Unknown	Residential
A (H-53)	Residential Units	Unknown	Residential
A (H-54)	Residential Units	Unknown	Residential
A (H-55)	Residential Units	Unknown	Residential
B (N-4)	103	14,194	COMSUB Barracks
B (N-4)	104	14,194	Naval Reserve Armory
B (N-10)	109	4,448	Police Station
B (N-10)	111(d)	218	Lubrication Oil Pumphouse
B (N-10)	112(d)	567	Diesel Oil Pumphouse
B (N-7)	113	25,994	Tug Maintenance and Salvage Diver's Shop
B (N-7)	114	14,194	Machine Shop and Maintenance Shops
B (N-5)	115	13,684	Submarine Office and Training School
B (N-5)	116	18,439	Submarine Subsistence and Training Building

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
B (N-4)	117	14,194	COMSUB Barracks
B (N-5)	118(d)	Unknown	Mess Hall and Submarine Bachelor Officer Quarters
B (N-5)	119(d)	7,640	COMSUB CPO Barracks
B (N-7)	120	14,008	Enlisted Men's Club
B (N-6)	121	25,000	Civil Training Center
B (N-6)	122	3,232	Electrical Substation V and Compressor Plant
B (N-8)	123	77,178	Battery Overhaul and Electroplating, Storage
B (N-11)	124(d)	Unknown	Acid Mixing Plant
B (N-9)	125	10,416	Submarine Cafeteria
B (N-9)	128	24,120	Shop Service and Work Control Center No. 1
B (N-16)	129	Unknown	Submarine Pier Office
B (N-12)	130	32,580	Machine Shop, Metal Working Shop, and Pipefitters Shop
B (N-9)	131	Unknown	Electrical Substation U
B (N-16)	132	Unknown	Service Craft Barracks
B (N-16)	133	992	Latrine
B (N-16)	140	4,494	Dry Dock 3 Pumphouse
B (N-16)	141	8,400	Dock Shipwright's Shop
B (N-16)	142A(d)	Unknown	Air Raid Shelter
B (N-OS)	144	1,053	Restrooms
B (N-OS)	145	510	Saltwater Pumphouse

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
B (N-6)	146	9,750	Industrial and Photography Laboratory, TACAN Facility
B (N-12)	156	4,000	Rubber Shop
B (N-15)	157	2,440	Q&RA Industrial Laboratory, Metal Fabrication Branch
B (N-9)	159	2,125	Latrine
B (N-15)	163	Unknown	Rubber Shop Annex
C (N-11)	134	51,716	Machine Shop, Q&RA Offices, Central Tool Room
C (N-14)	135	2,200	Electrical Substation G
C (N-18)	154	1,056	Office
C (N-23)	203	17,171	Power Plant, Substation H
C (N-21)	204	624	Saltwater Pumphouse
C (N-21)	205	10,282	Dry Dock 2 Pump and Compressor Plant
C (N-21)	206	5,668	Substation A
C (N-21)	207	4,253	Toilet
C (N-21)	208	5,048	Canteen and Service Shop
C (N-25)	211	63,263	Machine and Electronic Test and Repair Shop
C (N-20)	214	28,648	Combat Weapons System Office
C (N-23)	215	11,998	Firehouse
C (N-18)	217	44,120	Sheetmetal Shop
C (N-OS)	218	705	Restrooms
C (N-OS)	219	3,721	Electrical Substation E

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
C (N-25)	224	2,040	Bomb Shelter
C (N-OS)	225	6,188	Shop Service
C (N-OS)	226	1,209	Restrooms
C (N-24)	228	34,386	Former Cafeteria
C (N-OS)	229	630	Electrical Substation L
C (N-26)	230	5,834	Machine Shop
C (N-22)	231	191,497	Machine Shop
C (S-27)	234 (238)	1,800	Latrine and Ships Office
C (N-26)	235(d)	Unknown	Supervision and Storage
C (N-26)	236	450	Saltwater Pumphouse
C (N-18)	241	15,447	Forge Shop
C (N-20)	251	56,163	Industrial Relations and Control Tool Room
C (N-20)	252	8,274	Golden Anchor Coffee Shop
C (N-25)	253	195,347	Electronic, Optical, Radio, and Ordnance Shops
C (N-19)	258	72,834	Pipefitters Shop
C (N-24)	270	23,637	Paint Shop
C (N-24)	271	8,013	Paint Shop Annex
C (N-24)	272	42,923	Riggers and Laborers Shop, Shop Service Group
C (N-24)	273	544	Electrical Substation
C (N-23)	275	4,013	Sheetmetal Annex, Aluminum Casting

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
C (N-18)	278(d)	Unknown	Storage
C (N-18)	279(d)	Unknown	Material Storage Rack
C (N-18)	280	1,790	Aluminum Cleaning Facility
C (N-24)	281	45,000	Electronics-Weapons-Precision Facility
C (N-23)	282	9,600	Abrasive Blast Facility
C (S-27)	300	1,452	Electrical Substation
C (S-27)	301	4,416	Latrine
C (S-27)	367	2,306	Ship Supervisor Field Office
C (N-OS)	None	Unknown	YYK Sheds
C (N-23)	S-211	Unknown	Boiler Building
D (S-27)	274	4,000	Midway Liaison Office
D (S-28)	302	44,775	Transportation Shop
D (S-28)	303	Unknown	Transportation Shop
D (S-28)	304	1,070	Service Station
D (S-27)	306	1,752	Electrical Substation I
D (S-43)	307	10,000	Electronic Assembly Facility
D (S-27)	308	1,463	Saltwater Pumphouse
D (S-27)	311	1,800	Latrine and Ships Office
D (S-27)	313(d)	Unknown	NRDL Annex G
D (S-27)	313A(d)	Unknown	NRDL Annex G

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
D (S-39)	323	4,000	Shore Activities, Electronics, Boat Shop
D (S-39)	324	6,000	Carbon Dioxide Refilling Station
D (S-39)	351	38,204	Electronics Shop
D (S-39)	351A	22,879	NRDL Electronics Laboratory
D (S-28)	363	21,471	Woodworking Shop
D (S-39)	364	2,255	Radiation Hot Laboratory and Chemistry Laboratory
D (S-39)	365	842	Storage Building, Offices, and Film Laboratory
D (S-28)	366	36,313	Boat and Plastic Shop
D (S-27)	368	8,000	Pipefitting Shop
D (S-27)	369	8,810	Rigging Shop
D (S-27)	370	1,209	Restroom and Showers
D (S-27)	372	2,875	Prefab Decking Shelter
D (S-27)	374(d)	1,000	Poseidon Control Hut
D (S-27)	375(d)	1,000	Poseidon Control Hut
D (S-27)	376	480	Poseidon Control Hut
D (S-27)	377	4,240	Poseidon Systems Test Engineering
D (S-27)	378	800	Restroom and Shower
D (S-27)	379	1,280	Poseidon Engineering
D (S-27)	380	2,084	Poseidon Partial Full Test Machine
D (S-27)	381	4,000	West Coast Shock Testing Facility

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
D (S-27)	382	1,140	Poseidon Arresting System Shelter
D (S-27)	383	10,200	Poseidon Shopping and Receiving Building
D (S-27)	384	4,664	Poseidon Engineering
D (S-27)	385	3,672	Poseidon Engineering
D (S-30)	401	44,064	Public Works Shop
D (S-29)	402	36,314	Supply Storehouse, Q&RA Offices
D (S-30)	404	50,859	Supply Storehouse
D (S-37)	407	42,183	Ships Operational Activity Parts Offices and Supply Storage
D (S-38)	408	1,836	Furnace Shelter
D (S-38)	409	230	Welder Motor Generator Shop
D (S-38)	410(d)	230	Welder Motor Generator Shop
D (S-38)	411	287,976	Shipfitters Shops, Boiler Maker Shop
D (S-39)	415	Unknown	Storehouse
D (S-39)	416	Unknown	Storehouse
D (S-29)	417	500	Acetylene Manifolding, Welding Engineers
D (S-29)	418	1,387	Q&RA Welding Engineering Facility, Metal Spray
D (S-29)	419	682	Oxygen Converter
D (S-29)	420	1,320	Oxygen Cylinder Charging
D (S-29)	421	96	Oxygen Control Shop
D (S-29)	422(d)	396	Office and Latrine

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
D (S-29)	423(d)	392	Compressor Hut and Paint Storage
D (S-29)	424	805	Area Time House No. 4
D (S-30)	435	3,000	Equipment Storage
D (S-30)	436	3,000	Material Storage
D (S-30)	437	984	Pipe Storage
D (S-38)	438	432	Metal Spray Shelter
D (S-37)	439	100,000	Equipment Storage
D (S-40)	500	22,572	CPO Barracks
D (S-41)	501(d)	Unknown	Ships Barracks
D (S-41)	502(d)	Unknown	Ships Barracks
D (S-41)	503(d)	Unknown	Base Laundry Facility
D (S-40)	505	30,704	Navy Exchange
D (S-OS)	523	574	Saltwater Pumphouse
D (S-OS)	525	4,000	Storehouse
D (S-OS)	526	4,000	Storehouse and Offices
D (S-OS)	530	3,200	Automotive Hobby Shop
D (S-41)	606	89,600	Shore Intermediate Maintenance Facility
E (S-35)	371	2,460	Equipment Storage
E (S-31)	400	45,907	Ships Operational Activity Parts Receiving Storehouse
E (S-30)	404A	50,859	Supply Storehouse

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
E (S-31)	405	42,183	Supply Storehouse
E (S-36)	406	42,183	Storehouse, Packing and Preservation
E (S-36)	413	30,592	Supply Storehouse
E (S-36)	414	33,468	Public Works Furniture Storehouse
E (S-41)	506(d)	Unknown	NRDL Chemistry Laboratory
E (S-41)	507(d)	Unknown	NRDL Biological Laboratory
E (S-42)	508(d)	Unknown	NRDL Health Physics Office
E (S-44)	509(d)	Unknown	NRDL Animal Irradiation Laboratory
E (S-44)	510(d)	Unknown	NRDL Radiation Physics Laboratory
E (S-44)	510A(d)	Unknown	NRDL Radiation Physics Laboratory
E (S-44)	511(d)	Unknown	Offices
E (S-44)	511A(d)	Unknown	Woodworking Hobby Shop
E (S-42)	512(d)	Unknown	Elementary School
E (S-44)	513(d)	Unknown	Barracks
E (S-44)	514(d)	Unknown	Barracks
E (S-44)	515(d)	Unknown	Military Services
E (S-44)	516(d)	Unknown	Barracks
E (S-42)	517(d)	Unknown	NRDL Biomedical Facility
E (S-44)	518(d)	Unknown	Movie Theater
E (S-44)	520(d)	Unknown	Dental Clinic

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
E (S-44)	521	6,393	Power Plant
E (S-35)	524(d)	Unknown	Commissary Storehouse
E (S-OS)	527	408	Electrical Substation
E (S-41)	529(d)	Unknown	NRDL Radioisotope Storage and Cockcroft-Walton Accelerator
E (S-OS)	600	104,537	Bachelor Enlisted Men's Quarters
E (S-32)	702(d)	6,328	Storehouse and NBC Office
E (S-35)	704	8,013	Transportation Shop Car Shelter
E (S-35)	707	5,136	NRDL Research Animal Colony
E (S-35)	708	1,859	NRDL Biomedical Facility
E (S-35)	709	1,263	Navy Exchange Gas Station
E (S-32)	710	88	Toilet
E (S-35)	803(d)	Unknown	Commissary
E (S-45)	807(d)	1,482	Scrap Yard Shed
E (S-45)	809	11,159	Lumber Storehouse
E (S-45)	810	20,350	Paint and Oil Storehouse
E (S-45)	811	171	Service Station - Diesel Oil Platform
Other	815	Unknown	NRDL Main Laboratory
Other	820	Unknown	NRDL Cyclotron

TABLE 3-3A (Continued)

FORMER NAVY SHIPYARD USE OF BUILDINGS (1942-1974[a])
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Past Use or Building Name
Other	830	Unknown	NRDL Biological Laboratory (Kennel)
Other	831	Unknown	NRDL Biological Laboratory (Kennel)

Notes:

CPO	Chief Petty Officer
ft^2	Square foot
N/A	Not available
Navy	U.S. Department of the Navy
NBC	National Broadcasting Company
NRDL	U.S. Naval Radiological Defense Laboratory
TACAN	Tactical Air Navigation

a Hunters Point Shipyard was deactivated in 1974.

TABLE 3-3B

CURRENTLY USED BUILDINGS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Current Use[a]	Current Tenant[b]
A (N-17)	101	119,800	Art activities and office space	J. Terzian
A (N-17)	110	20,502	Art activities	J. Terzian
A (H-51)	158	30	Sentry house – main gate	EFA West
A (H-51)	322	858	Security guard and pass office	EFA West
A (S-46)	808	45,766	Copier paper and toner cartridge distribution center	Precision Transport
A (S-47)	813	276,916	Offices and warehouse space	Navy (will be moving)
A (H-51)	915	1,790	Offices	SFRA
A (N-3)	916	9,304	Restaurant	Dago Mary's Restaurant
B (N-4)	103	14,194	Art activities	J. Terzian
B (N-4)	104	14,194	Art activities	J. Terzian
B (N-7)	114 (113A)	14,194	Offices and workshop	Smith-Emery Co.
B (N-5)	115	13,684	Woodworking shop and work studios	Finish Works
B (N-5)	116	18,439	Picture framing	Frameworks and Various Artisans
B (N-4)	117	14,194	Art activities	J. Terzian
B (N-7)	120	14,008	Athletic facility	Police Athletic Club
B (N-9)	125	10,416	Cabinet making, workshop, offices, and storage	Bridenthal Cabinetry
B (N-9)	128	24,120	Storage	CCSF DEA

TABLE 3-3B (Continued)

CURRENTLY USED BUILDINGS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Current Use[a]	Current Tenant[b]
C (N-11)	134	51,716	Refrigeration and air conditioning	Odaco, Inc.
C (N-23)	203	17,171	Power plant	Astoria Metals has access to the building for electrical reasons
C (N-25)	211	63,263	Maritime administration ship equipment storage	DOT, Maritime Administration
C N-23)	215	11,998	Firehouse	EFA West
C (N-OS)	229	630	Electrical Substation	CINC PAC FLEET, Navy
C (N-26)	230	5,834	Wheel manufacturing	Ermico Enterprises
C (N-25)	253	195,347	Ship parts storage	DOT, Maritime Administration
C (N-24)	270	23,637	Equipment storage and office space	YYK (CINC PAC FLEET, Navy)
C (N-24)	271	8,013	Equipment storage and barge services office	YYK (CINC PAC FLEET, Navy)
C (N-24)	272	42,923	Offices, workshop, and storage	Carpenter Rigging and Ermico Enterprises
C (N-23)	275	4,013	Aluminum casting shop	Ermico Enterprises
C (N-24)	281	45,000	Empty	SFRA
C (S-27)	300	1,452	Electrical Substation	Astoria Metals has access to the building for electrical reasons
C (S-27)	301	4,416	Men's showers and locker rooms	Astoria Metals
C (S-27)	367	2,306	Field office	Astoria Metals
C (S-27)	Dry Dock 4	--	Ship dismantling	Astoria Metals

TABLE 3-3B (Continued)

CURRENTLY USED BUILDINGS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Current Use[a]	Current Tenant[b]
D (S-28)	302	44,775	Locomotive Restoration Area	Golden Gate Railroad Museum
D (S-27)	306	1,752	Electrical Substation	Astoria Metals
D (S-43)	307	10,000	Equipment Storage	SFRA (subleased to Wedrell, Wilson, and Sons)
D (S-27)	308	1,463	Saltwater Pumphouse	Astoria Metals does not use the building
D (S-27)	311	1,800	Unknown	Astoria Metals
D (S-39)	323	4,000	Art activities	J. Terzian
D (S-28)	363	21,471	Workshop	Quality Craftsman
D (S-39)	364	2,255	Laboratory for metals analysis	Young Laboratories
D (S-28)	366	36,313	Workshop and art activities	Christian Engineering/J. Terzian
D (S-27)	372	2,875	Hazardous materials storage	Astoria Metals
D (S-27)	381	4,000	Offices and Workshop	SFRA (subleased to Wedrell, Wilson, and Sons)
D (S-27)	383	10,200	Office space	EFA West (Caretaker Staff Office)
D (S-30)	401	44,064	Art activities, workshop, and storage	Di Paolo and Barbar/J. Heagy/ P. Powers/West Edge Design
D (S-30)	404	50,859	Workshop and manufacturing sheetmetal products	Mina Metal Corporation
D (S-37)	407	42,183	Moving and storage	American Van Lines

TABLE 3-3B (Continued)

CURRENTLY USED BUILDINGS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel (Sub-Parcel)	Building Number	Area (ft^2)	Current Use[a]	Current Tenant[b]
D (S-38)	411	287,976	Workshop, storage, and offices	Sierra Western Equipment/Eric Lansdown/Christian Engineering
D (S-29)	417	500	Storage	Hydro-Chem
D (S-29)	418	1,387	Offices and workshop	Hydro-Chem
D (S-29)	424	805	Storage, laundry, and showers	Hydro-Chem
D (S-30)	435	3,000	Storage and art activities	J. Terzian/West Edge Design
D (S-41)	606	89,600	Police staging area, offices, and vehicle storage	SFRA (sublease to SFPD)
E (S-35)	371	2,460	Storage and scrap metal storage	S&W Productions
E (S-31)	405	42,183	Equipment	Clean Comp
E (S-36)	406	42,183	Automobile repair	B&A
E (S-36)	413	30,592	Moving and storage	American Van Lines
E (S-35)	704	8,013	Maintenance workshop	Wagner
E (S-45)	809	11,159	Locomotive storage and restoration area	Golden Gate Railroad Museum
E (S-OS)	Off Base	9,600	Railroad Right-Of-Way	Golden Gate Railroad Museum

Notes:

Astoria Metals	Astoria Metals Corporation
B&A	B&A Bodyworks and Towing
CCSF	City and County of San Francisco
DOT	U.S. Department of Transportation
DEA	U.S. Drug Enforcement Agency

Notes (Continued):

EFA West	Engineering Field Activity West

TABLE 3-3B (Continued)

CURRENTLY USED BUILDINGS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

ft^2	Square foot
HPS	Hunters Point Shipyard
Hydro-Chem	Hydro-Chemical Services, Inc.
Navy	U.S. Department of the Navy
NRDL	Naval Radiological Defense Laboratory
SFRA	San Francisco Redevelopment Agency
SFPD	San Francisco Police Department
Wagner	Wagner Construction Company

a Only buildings currently used are listed. Buildings not listed are either demolished or not being used.
b Building is being leased by listed tenant or used in some capacity by listed tenant.

Modified from:

1997 Tenant Survey – see Appendices B or H

TABLE 3-4

SAN FRANCISCO REDEVELOPMENT AGENCY'S PRIORITY BUILDINGS PROPOSED FOR REUSE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Priority[a]	ECP Area Type	Building No.[a]	Current Tenant	Building Area (ft^2)	Possible Use by Future Tenant[a]
1st	6	274	Not in use	4,000	Industrial
1st	6	281	SFRA (Empty)	45,000	Industrial and/or film industry
1st	6	307	Not in use	10,000	Light industrial
1st	6	324	Not in use	6,000	Industrial
1st	6	351A	Not in use	22,879	Industrial
1st	6	368	Not in use	8,000	Industrial
1st	6	369	Not in use	8,810	Industrial
1st	6	376	Storage	480	Storage
1st	6	379	Not in use	Unavailable	Classroom
1st	6	415	Not in use	4,000	Industrial
1st	6	416	Not in use	4,000	Industrial
1st	6	419	Not in use	682	Light industrial and/or storage
1st	6	420	Not in use	1,320	Light industrial and/or storage
1st	4	439	Not in use	100,000	Industrial and/or manufacturing
1st	4	606	SFRA (subleased to SFPD)	89,600	Current tenant will remain
1st	4	813	Navy (will be moving)	276,916	Offices, storage, and/or artists' spaces
2nd	1	102	Not in use	16,954	Offices
2nd	5	113	Not in use	25,994	Light industrial
2nd	3	115	Frame Works	13,684	Light industrial
2nd	3	116	Frame Works and various artisans	18,439	Light industrial

TABLE 3-4 (Continued)

SAN FRANCISCO REDEVELOPMENT AGENCY'S PRIORITY BUILDINGS PROPOSED FOR REUSE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Priority[a]	ECP Area Type	Building No.[a]	Current Tenant	Building Area (ft^2)	Possible Use by Future Tenant[a]
2nd	5	128	SFPD	24,120	Light industrial
2nd	5	130	Not in use	32,580	Light industrial
2nd	6	134	Odaeco, Inc.	51,716	Industrial
2nd	5	146	Not in use	9,750	Light industrial and/or offices
2nd	6	214	Not in use	28,648	Offices
2nd	6	258	Not in use	72,834	Light industrial
2nd	6	381	Not in use	4,000	Light industrial and/or offices
2nd	6	436	Not in use	3,000	Light industrial
3rd	5	121	Not in use	25,000	Light industrial
3rd	6	211	DOT, Maritime Administration	63,263	Storage
3rd	6	231	Not in use	191,497	Industrial
3rd	6	251	Not in use	56,163	Light industrial, shops, and/or offices
3rd	6	252	Not in use	8,274	Café
3rd	6	253	DOT, Maritime Administration	195,347	Storage
3rd	6	282	Not in use	9,600	Industrial and/or storage
3rd	1	921	Not in use	40,000	residential

Notes:

EFA West Engineering Field Activity West
Navy U.S. Department of the Navy
SFPD San Francisco Police Department
SFRA San Francisco Redevelopment Agency

TABLE 3-4 (Continued)

SAN FRANCISCO REDEVELOPMENT AGENCY'S PRIORITY BUILDINGS PROPOSED FOR REUSE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

a SFRA. 1994a, 1994b, and 1994c.

CHAPTER 4

ENVIRONMENTAL SETTING

This chapter presents information on the environmental setting, natural resources, utilities, and transportation resources at the facility.

4.1 PHYSICAL DESCRIPTION

This section describes HPS's location and topography, climate and meteorology, geology, and hydrogeology.

4.1.1 Location and Topography

HPS is located on the east side of the San Francisco Peninsula. The site is in the central Coast Ranges geomorphic province of California, which consists of a series of northwest-trending ranges and valleys averaging about 50 miles in width. These ranges end abruptly along the west coast of California, and terminate more gently along the edge of the alluvial plain of the Great Valley in the east. San Francisco Bay occupies a valley that was inundated by slowly rising seas and received melted water from the continental glaciers of the Quaternary time (Tetra Tech 1994). The Bay is now a shallow body of water. Table 4-1 presents the geologic units at HPS and their correspondent hydrogeologic units.

The original cliffs of HPS had a maximum elevation of 280 feet above mean sea level (msl). The cliffs were razed and used to fill the lowland areas. Approximately 400 acres of the dry land portion of HPS was filled on a level plane from 12 to 15 feet above msl (Tetra Tech 1994). The area was filled in stages beginning in 1940. The remaining HPS land is on an uplifted, moderately steep to steep formation of serpentinite rock. The current maximum elevation at HPS is approximately 130 feet above msl. Aerial photographs presented in Appendix C of this report show how the HPS landscape has changed through filling activities.

4.1.2 Climate and Meteorology

The potential for developing high air pollutant concentrations in the San Francisco Bay Air Basin and at HPS depends on the quantity of pollutants emitted in the surrounding area and the ability of the atmosphere to disperse these pollutants. Atmospheric dispersion depends heavily on wind patterns and inversion heights.

Winds flow mostly on shore through the Golden Gate and northwesterly, with higher wind speeds in regions where air is channeled between mountains. In the winter, Bay Area wind levels, on average, tend to decrease; however, storms bring moderate to strong winds to the region. Table 4-2 shows average wind direction and other climatological data during various times of the year for the San Francisco International Airport, located about 7 miles south of HPS.

The frequent occurrence of temperature inversions over the Bay Area limits the availability of air to dilute contaminant emissions. Although the height of inversion layers usually increases throughout the day, early morning inversions allow for a buildup of pollutants. The fewest inversions occur in the months of March and April, when weather patterns are changing. Inversions are quite common from June through September. During this period, inversions below 5,000 feet on average will occur on at least 2 days (Tetra Tech 1994).

The Bay area climate is characterized by moderately wet winters and dry summers. Ninety percent of the annual rainfall is typically received between November and April. During rainy periods, ventilation and mixing of air layers are high, resulting in lower pollution levels. The HPS area averages 19.71 inches of rain per year, with 70 percent of the rainfall occurring from December to March (see Table 4-2).

Temperatures in the area are generally moderate. Average summer temperatures range from the low 50s °F to the high 70s °F, and average winter temperatures range from the low 40s °F to the low 60s °F. Due to the effect of differential heating between land and water surfaces, a large-scale temperature gradient exists within the air basin. In the summer, daytime temperatures 15 to 20 miles inland can be 35 °F higher than temperatures measured at the shoreline areas. This differential decreases to less than 10 °F at night; in the winter, the gradient reverses. Shoreline temperatures are increased by the ocean waters, and the inland temperatures are sometimes 20 °F lower (Tetra Tech 1994).

The Bay Area Air Quality Management District (BAAQMD) is responsible for achieving and maintaining the state and federal air quality standards for the San Francisco Bay Area. The BAAQMD has established enforceable rules and regulations to limit pollutant emissions. Additionally, the BAAQMD has become involved in community planning activities.

The BAAQMD has implemented a monitoring system throughout the air basin for six criteria pollutants. These pollutants include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), and inhalable particles (PM_{10}). PM_{10} is defined as particulate matter 10 microns in diameter

or smaller. Lead concentrations are measured from particulate samples. Each of these pollutants is regulated under the 1970 Clean Air Act (CAA) Amendment, and each has an established concentration standard. The State of California established standards for these pollutants in the 1969 Mulford-Carrell Act. If a region has concentrations of these pollutants in excess of these standards, it is considered a nonattainment region for that pollutant.

Although air quality has greatly improved in the Bay area in the last 30 years, the region is still a nonattainment area for O_3, CO, and PM_{10}. Emissions of NO_2 are also very important, as NO_2 and hydrocarbons form ozone. The BAAQMD predicts that nitrogen oxides and hydrocarbon emissions will begin to increase slightly in the next 10 years. Sulfur dioxide and particulate emissions will rise with increases in pollutant sources. Carbon monoxide emissions will remain relatively constant because increases in the number of motor vehicles will be offset by stricter emissions standards for cars (Tetra Tech 1994).

The BAAQMD has issued permits in the past to operate stationary sources at HPS. The BAAQMB air permits applicable to Parcels A through E at HPS remaining in 1996 and 1997 covered the paint spraying and sandblast equipment at Dry Docks 3 and 4 and two boilers for building space heating. The Navy canceled these remaining air permits in mid-1997.

Some of the buildings at HPS have asbestos-containing material (ACM). Asbestos is considered a hazardous material by EPA, and the release of asbestos fibers into the ambient air is controlled. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) provides rules concerning the removal and disposal of ACM. The asbestos abatement program at HPS is complete. Damaged, friable, and accessible asbestos found in the buildings at HPS was abated in accordance with all applicable regulations, with the exception of Building 521, where entry is restricted. Nonfriable and inaccessible asbestos is still present in buildings at HPS.

Between 1987 and 1993, four air quality monitoring investigations were conducted at various locations at HPS (HLA 1987, 1989a, 1989b, and 1992d). Low concentrations of volatile organic compounds (VOC) were detected during these investigations. None of these compounds was detected at concentrations determined to be a significant health threat (HLA 1992d). In January 1996, an indoor air quality investigation was conducted to obtain data on the air quality in 10 buildings at HPS located over or adjacent to areas where groundwater was found to contain VOCs. Low levels of VOCs were detected in buildings, but were below the EPA criteria protective of human health (see Section 5.3.12.2 of Chapter 5)

Air monitoring for gross alpha and beta radioactive particles has been conducted at HPS. Gross alpha and gross beta radioactivity levels associated with airborne particulate matter in these areas are well below the regulatory limits set in the California Code of Regulations (CCR) Title 17, Paragraph 30355, Appendix A (PRC 1992a).

4.1.3 Geology

The peninsula on which HPS was built is within a northwest-trending belt of Franciscan Assemblage known as the Hunters Point Shear Zone (Bonilla 1971). This belt extends southeast to northwest, diagonally from Hunters Point through the city of San Francisco to the south abutment of the Golden Gate Bridge at Fort Point (Wahrhaftig 1984; Wakabayashi 1992). Rocks within this belt are intensely deformed and sheared, and form a serpentinite and melange belt. Geologic contacts between different rock types within the Franciscan Assemblage are typically sheared (PRC 1994e).

4.1.3.1 Consolidated Deposits

The Hunters Point area of the San Francisco Bay is underlain by six geologic units, the youngest of Quaternary age and the oldest of Franciscan Assemblage of Jurassic-Cretaceous age, as shown on Figure 4-1. The Franciscan Assemblage is one of the most extensive assemblages of rocks in the Coast Ranges. The Franciscan Assemblage is bedrock and forms most of what was the original point at Hunters Point. It underlies the basin sediments and consists of sandstone, shale, chert, greenstone (altered volcanic rock), and serpentinite. Serpentinite forms major portions of the hills of high lands at HPS. The characteristics of serpentinite vary from hard rock to medium-soft material. Fractures typically present in the Franciscan Assemblage may act as conduits for groundwater flow (PRC 1994e).

4.1.3.2 Unconsolidated Deposits

Unconsolidated deposits of sand, gravel, and clays overlie the Franciscan Assemblage throughout most of HPS. These deposits are divided into six geologic units (see Figure 4-1), which are from top to bottom as follows: Artificial Fill (Qaf), Landslide Deposits (Qls), Slope Debris and Ravine Fill (Qsr), Undifferentiated Upper Sand Deposits (Quus), Bay Mud Deposits (Qbm or Bay Mud), and Undifferentiated Sedimentary Deposits (Qu). The Franciscan Formation includes serpentine rock (sp), and Franciscan Formation sandstone and shale (KJs), chert (KJc), and greenstone (altered) volcanic rock (KJg).

With the exception of the northwest rock outcrop in Parcel A, the surficial geology of HPS consists primarily of Artificial Fill. The fill consists of two types: bedrock-derived fill from the upland areas of Parcel A, and industrial fill consisting of domestic and industrial wastes, including sandblast materials and construction debris. In the low-lying areas, the Artificial Fill is underlain by Bay Mud. Bay Mud consists of soft, organic-rich, plastic clay and silt with interbedded lenses of sand and peat. Between the lowland area and the bedrock outcrops, the Artificial Fill directly overlies bedrock. Where Bay Mud is present, it is underlain by Undifferentiated Sedimentary Deposits or bedrock. Colluvial deposits, referred to as Slope Debris and Ravine Fill by Bonilla (1971), may also be present locally above the Franciscan Assemblage on Bay Mud. Slope Debris and Ravine Fill are difficult to differentiate from bedrock-derived Artificial Fill.

4.1.3.3 Surface Soil

The distribution of soil at HPS is shown on Figure 4-2. The soil series, classified by the U.S. Soil Conservation Service (SCS), includes Bicknell sandy loam (BrD), Made Soils (Ma), Fine Made Soils (Mb), Made Soils over Bay Mud (Mc), Montara gravelly clay loam (Mdf), and Montara gravelly loam (MeE2).

Bicknell Series

The Bicknell series consists of deep to very deep, slightly acid, well-drained, moderately coarse-textured soils. They developed in alluvium from mainly sedimentary sources. This soil is underlain by serpentinite residuum. It occurs on shaped, modified, strongly sloping bench remnants. The surface soils are typically dark, grayish-brown, sandy loam, massive, slightly hard, slightly acid, and 20 to 30 inches thick. The subsoils are yellowish-brown, sandy loam, prismatic, hard to very hard, slightly acid, and more than 36 inches thick. Unrelated substrata at depths mostly below 48 inches are stratified, gravelly clay loam to gravelly clay serpentinite materials.

These soils are limited to areas within Parcel A at HPS. These soils have been imported and are used for lawns and landscaping.

Made Soils

Made Soils consist of deep cuts and smooth-shaped fills over metamorphic and basic igneous bedrock. The fill material includes basalt and serpentinite cracked bedrock, and gravelly loam to gravelly clay loam

of Montara soil variant. These areas occupy the deeply cut, smoothed uplands and consist mostly of Montara variant gravelly clay loam and some gravelly loam underlain by bedrock at depths from 12 to 36 inches. Small bedrock escarpments are included within this unit and are shown by rock escarpment symbols.

As shown on Figure 4-2, these soils cover most of Parcel C as well as the inland areas of Parcels B and D. These soils are generally not found within Parcel E.

Made Soils, Fine (Mb)

Made Soils, Fine consist of a mixed area of deep cuts and a shaped fill. The shaped fill generally consists of a mixed gravelly clay loam of the residuum, and hauled-in clay from an undetermined sedimentary residuum or alluvium source off site. Effective depth ranges from about 10 to 36 inches. Underlying bedrock is a fractured structure and is subject to slipping and movement. Much of the fractured bedrock is clay-coated. Made Soils, Fine occur on moderately steep uplands.

As shown on Figure 4-2, these soils are limited in coverage to a small area within Parcel A.

Made Soils Over Bay Mud (Mc)

Made Soils over Bay Mud consist of deep fill material over the formerly underwater soil of San Francisco Bay. Fill material includes bedrock of the nearby serpentinite and basalt formation, gravelly loam, gravelly clay loam, clay, and sandy loam soil material.

As shown on Figure 4-2, these soils cover the shoreward areas of Parcels B, D, and E. These nearly level areas are used for storage, roads, buildings, equipment, and former playground areas. Some subsidence and wave bank erosion is to be expected in these areas.

Montara Series (Variant)

Montana Series (variant) consists mostly of shallow, neutral to moderately alkaline, noncalcareous, somewhat excessively drained, medium and moderately fine-textured gravelly soil. This soil was formed mainly on serpentinite and basaltic bedrock. It occurs on moderately steep and steep uplands. The surface soil is typically dark gray, gravelly loam, granular, hard, neutral, and 4 to 12 inches thick. The subsoil is dark grayish brown, gravelly clay loam, fine blocky or granular, hard, moderately alkaline, and

7 to 14 inches thick. Underlying bedrock is variable decomposed, metamorphosed, and basic igneous bedrock at depths from 12 to 20 inches.

Colors of the gravelly loam and gravelly clay loam surface soil are dark gray. The gravelly clay loam subsoil ranges in color from a grayish brown to dark grayish brown. Erosion has removed an estimated 2 to 4 inches of top soil on about 60 percent of the area. This soil occurs on smooth, moderately steep upland.

According to SCS, the Bicknell soil has moderate infiltration rates when thoroughly wetted. The soil is moderately well- to well-drained and has a moderate rate of water transmission. All other soil at HPS, according to SCS, has slow infiltration rates when thoroughly wetted. This is chiefly clay soil with a high swelling potential, a high permanent water table, claypan or clay layers at or near the surface, and potentially impervious materials. This soil has a very slow rate of water transmission. The SCS categorizes the permeability of this soil as less than 0.63 inch per hour (4.4×10^{-4} centimeters per second [cm/sec]) (Tetra Tech 1994).

4.1.3.4 Geologic Hazards – Seismicity/Faulting

The San Francisco Bay Area, including HPS, is one of the more seismically active regions in California. Major fault zones pass through the Bay Area in a northwest direction (see Figure 4-3). These faults have caused more than six major earthquakes since 1936. The faults are part of the San Andreas Fault System, which extends for at least 450 miles along the California coast and includes the San Andreas, Hayward, and Calaveras faults, located 7 miles southwest, 10 miles northeast, and 20 miles northeast of HPS, respectively. Several other faults of lesser or unknown seismic activity also trend in the northwest direction in the general vicinity of the site, including the San Bruno, Hillside, and City College faults, located 5, 4, and 1.7 miles, respectively, southwest of the base. The base itself is not within an Alquist-Priolo Special Study Zone, which covers known faults in California (ESA 1987).

Although no active faults are known to underlie the base, there is some evidence of ancient shearing and faulting in the Franciscan Bedrock. Bonilla of the U.S. Geological Survey (USGS) (USGS 1965) mapped a fault within HPS. This fault lies within the Franciscan Assemblage in the center portion of HPS. Schlocker (USGS 1974) mapped a broad shear zone extending from the southeast at HPS to the northwest, and toward Fort Point in the Golden Gate National Recreation Area. This zone has been named the Fort Point - Potrero Hill - Hunters Point Shear Zone. The fault mapped by Bonilla is

considered an element in this zone. Quaternary sediment overlies a portion of the shear zone in the San Francisco area and does not appear to be affected by faulting or shearing. Based on this and a lack of historical earthquake activity, the Fort Point - Potrero Hill - Hunters Point Shear Zone is considered inactive (Blume and Associates 1974).

HPS is within a zone that would experience violent ground shaking during a large earthquake on the San Andreas or Hayward faults (USGS 1979a). Figure 4-3 shows the likely magnitude of an earthquake caused by movement on the faults in the Hunters Point area (USGS 1979b).

4.1.3.5 Geologic Hazards – Liquefaction, Densification, and Settling

Soil liquefaction occurs when saturated, loose, or medium dense cohesionless soil is subjected to strong ground shaking, causing soil to act like a liquid. Most of HPS is underlain by heterogeneous unsaturated fill. Although isolated areas of this fill may be susceptible to liquefaction in the event of an earthquake, it is unlikely that large areas would liquefy.

Soil settlement occurs due to compaction of unsaturated, loose, cohesionless soil and fill and is often accelerated by strong ground shaking caused by earthquakes. The density of the fill that underlies the Hunters Point area is an important factor in determining if settlement would occur. It is likely, given the age of the fill and its heterogeneous composition, that considerable compaction has been attained. However, it is possible that severe ground movement could result in differential settlement throughout HPS. This settlement often has detrimental effects on buried utilities, as shown in the 1989 Loma Prieta earthquake. Several areas of the waterfront along Berths 21, 22, and 29 suffered significant settlement and buckling due to the earthquake. Within HPS, only portions of Parcel C are directly underlain by bedrock and hence are not subject to settling or compaction (Tetra Tech 1994).

4.1.3.6 Geologic Hazards – Landslides

The weathered rocks and serpentinite of the Franciscan Assemblage that compose the higher slopes in the central portion of Hunters Point are subject to landslides. The only known landslide area on the base is located within Parcel A. Landslides are most likely to occur during periods of high precipitation or as a result of earthquakes. Small landslides might also occur on steep slopes underlain by thick colluvial soil.

4.1.3.7 Geologic Hazards – Tsunamis

Because of the low elevation of much of the base and its proximity to San Francisco Bay, HPS is considered susceptible to inundation by seismically induced sea waves (tsunamis). The shoreward portion of the site could be inundated by tsunamis passing through the Golden Gate. Projected maximum 100-year recurrence tsunami events are expected to produce runups at the site ranging from 3.9 feet above msl in the south to 5.7 feet above msl in the north. On-site runups due to 500-year recurrence tsunamis are expected to produce runups ranging from 9.7 feet above msl in the north to 5 feet above msl in the south (Garcia and Houston 1975). These estimates are subject to 40 percent statistical uncertainty. Inundation of this type could be expected to produce severe damage (Tetra Tech 1994).

As shown on Figure 4-4, portions of Parcels B through E lie within the area of potential tsunami inundation. Due to HPS's location relative to the Golden Gate Bridge, inundation of areas in northern portions of Parcels B, C, D, and E at HPS would be more severe than in the southern portions. Greater flood-related damage would be expected in Parcels B and C as compared with Parcels D and E (Tetra Tech 1994).

4.1.4 Hydrogeology

This section describes the regional hydrogeology and the HPS hydrogeology, and presents the conceptual hydrogeologic model of HPS, based on current knowledge. For the purposes of this report, an aquifer is defined as a saturated, relatively permeable, native geologic or artificial material that occurs at similar geologic unit elevations, is relatively continuous in lateral extent, is of similar depositional or placement origin, and appears to be in hydraulic continuity based on water level data. An aquitard is defined as a layer of low permeability that can store groundwater and also transmit groundwater slowly from one aquifer to another. A water-bearing zone is defined as the weathered or fractured zone of the bedrock that contains water.

4.1.4.1 Regional Hydrogeology

San Francisco contains seven groundwater basins: two oceanside (west side) basins and five Bayside (east side) basins (CH2M Hill 1993). Two of the Bayside basins, the Islais Valley Groundwater Basin on the northeast and the South Groundwater Basin on the southwest, divide San Francisco into two equal parts, as shown on Figure 4-5. The 5,600-acre Islais Valley Groundwater Basin consists of 5,000 acres within the city and 600 areas south of the city. The 2,100-acre South Groundwater Basin lies in the city,

near HPS. The total amount of groundwater stored in the basins is estimated at 13,000 acre-feet in the Islais Valley Groundwater Basin and 5,000 acre-feet in the South Groundwater Basin (CH2M Hill 1993).

Most of the groundwater recharge to the Islais Valley and South Groundwater Basins is rejected as outflow to the San Francisco Bay, east of the basins. Discharge as outflow from the Islais Valley Groundwater Basin is mainly from outflow to the Bay. Discharge as outflow from the South Groundwater Basin is generally eastward from the bedrock ridges to the Bay (CH2M Hill 1993).

The regional groundwater quality of the Islais Valley and South Groundwater Basins is unknown, although toxic sites, including leaking USTs east of Highway 101, were identified by the California Regional Water Quality Control Board (RWQCB). The few wells developed in these basins are known to produce water of drinking water quality to water exceeding primary drinking water standards for nitrate and secondary drinking water standards for total dissolved solids (TDS). Well water samples from the Islais Valley Groundwater Basin were reportedly very hard, with more than 200 milligrams per liter (mg/L) as calcium carbonate, and samples were hard to very hard from the South Groundwater Basin (CH2M Hill 1993).

4.1.4.2 Hydrogeology of HPS

Two aquifers and one water-bearing zone have been identified at HPS: the A-aquifer, the B-aquifer, and the bedrock water-bearing zone. Table 4-3 summarizes aquifer and aquitard conditions and hydraulic properties. Table 4-1 presents the aquifers at HPS as they correspond to geologic units.

The A-aquifer, the most fully characterized aquifer, consists of saturated porous media such as fill materials and Undifferentiated Upper Sand Deposits overlying Bay Mud Deposits. The A-aquifer may overlie bedrock directly in excavated areas at the former 1935 shoreline. An aerial photograph depicting the 1935 shoreline is presented in Appendix C of this report. The A-aquifer is unconfined, with depths to groundwater ranging from 2 to 70 feet below ground surface (bgs) (PRC 1994e). The aquifer is recharged by precipitation infiltration in the unpaved areas, especially in Parcel E; by water intrusion; and by water leakage from storm drains and, in some areas, the sanitary sewer system. In areas where sewer lines are below the groundwater surface, or are leaking and influenced by Pump Station "A" in Parcel A, the sewer system serves as a hydrogeologic discharge or sink area.

Groundwater flow in the A-aquifer at HPS is complex due to nonuniformity in the hydraulic properties of the subsurface fill materials, tidal influences, effects of storm drain and sanitary sewer systems, and

variations in topography and drainage. Large variations in hydraulic properties are due to variations in fill type, soil texture, degree of compaction, and distribution of sediments. Groundwater in the A-aquifer at HPS generally flows outward toward San Francisco Bay, except where reversed due to the influence of Pump Station A, and along the shoreline where tidal influences are apparent. These tidal influences are less pronounced in Parcels B through D because of construction along the shoreline. Groundwater quality of the A-aquifer is slightly saline with high TDS (PRC 1994e).

The A-aquifer and the underlying B-aquifer are separated by Bay Mud Deposits ranging from 5 to 60 feet thick under most of the low-lying areas of HPS. Clay and silt, which make up the greatest portion of the Bay Mud Deposits, act as an aquitard or confining layer between the A- and B-aquifers.

The B-aquifer consists of saturated porous Undifferentiated Sedimentary Deposits underlying Bay Mud Deposits and overlying the Franciscan Complex Bedrock in the lower elevations of HPS. The B-aquifer is generally a confined, porous media aquifer where groundwater is under pressure. The B-aquifer directly underlies the A-aquifer where Bay Mud Deposits are absent. Due to the absence of Bay Mud Deposits, the B-aquifer is unconfined or semi-confined at these locations. Hydrogeologic conditions of the B-aquifer and the effectiveness of the Bay Mud Deposits as an aquitard and barrier to vertical flow are not well known on a facility-wide basis because few monitoring wells have been completed in the B-aquifer. Recharge of the B-aquifer is generally unknown, but the bedrock water-bearing zone and the San Francisco Bay are likely to contribute to it. Groundwater in the B-aquifer at HPS generally flows outward toward San Francisco Bay. Groundwater quality of the B-aquifer is slightly saline with high TDS (PRC 1994e).

The bedrock water-bearing zone is the upper weathered portions or the deeper fractured portions of the Franciscan Assemblage Bedrock. The bedrock water-bearing zone appears to be in direct hydraulic communication with the A-aquifer where the A-aquifer directly overlies it. This situation occurs mainly in excavated areas adjacent to the former 1935 shoreline. The identification and characterization of the bedrock water-bearing zone is extremely difficult due to the highly deformed and complex nature of the bedrock. Hydrogeologic conditions of the bedrock water-bearing zone are not well known on a facility-wide basis because few monitoring wells have been completed in this zone. Recharge to the bedrock water-bearing zone is likely to be from precipitation, runoff, leakage from storm drains and sanitary sewers, and in some areas, the A-aquifer. The direction of groundwater flow in the bedrock water-bearing zone is not easily characterized due to its discontinuous nature. Groundwater within the bedrock

is limited to discrete fractures, shear zones, and weathered portions. Groundwater quality of the bedrock water-bearing zone is likely to be fresh to saline depending on the area of HPS.

4.2 NATURAL RESOURCES

Natural resources at HPS include biological, surface water, cultural, and archaeological resources. Some of the information presented in this section is based on information collected from the completion of the first phase of the basewide ecological risk assessment (ERA) (PRC 1994d). The second phase of the basewide ERA, a quantitative risk evaluation was completed in late 1996 (PRC 1996f).

4.2.1 Biological Resources

The habitat and biota at HPS are summarized in this section.

4.2.1.1 Habitat

Seven separate habitat types have been identified at HPS: (1) ruderal, (2) nonnative grassland, (3) landscaped, (4) industrial, (5) wetland (coastal salt marsh) and seasonal wetland, (6) intertidal, and (7) subtidal. The on-shore habitat contains the ruderal, nonnative grassland, landscaped, and industrial habitat types. The off-shore habitat contains the wetland and intertidal habitat types. All habitats have been disturbed by humans to some degree, contain various amounts of trash and rubble, and may contain contaminants (PRC 1994d). Wetlands and mudflats have been identified as rare or sensitive habitats at HPS. A habitat overlay map is presented on Figure 1-5, in Chapter 1.

On-Shore Habitat

Ruderal, nonnative grasslands, landscaped, and industrial habitats can be found on shore. The on-shore habitat at HPS supports numerous burrows, apparently dug by small mammals. These mammals may be consumed by mammalian and avian predators. The on-shore habitat, especially in Parcels A and E, also provides foraging, nesting, and roosting habitats for various birds, including threatened, endangered, and other species of concern. Most of the on-shore area of HPS is covered by pavement and unused industrial buildings. With little open space for flora and fauna, the area is considered to have little habitat value.

Off-Shore Habitat

The off-shore habitat includes intertidal zones of mudflats and salt marsh and subtidal areas supporting an array of aquatic receptors that form a complex, well-developed food web. During low tide, the intertidal zone provides foraging habitat for migratory and resident shorebirds that consume invertebrates such as bivalves, oligochaetes, polychaetes, crustaceans, gastropods, and chordates. The shorebirds in turn are preyed upon by the federally endangered peregrine falcon (*Falco peregrinus*), which has been observed foraging in the adjacent ruderal habitat. At high tides, these invertebrates are also preyed upon by fish such as the silver surfperch (*Hyperprosopon ellipticum*), cheekspot goby (*Ilypnus gilberti*), and white croaker (*Genyonemus lineatas*).

Subtidal Habitat

The subtidal habitat surrounding the facility, in particular the shoreline area in Parcel E, is used by birds including the double-crested cormorant (*Phalacrocorax auritus*), California brown pelican (*Pelicanus occidentalis*), and several dabbling and diving ducks. Small fishes, including anchovies (*Anchoa mitchiilli* and *Engraulis mordax*), Pacific herring (*Clupea harengus palasii*), and several gobies, are prey for the California brown pelican, osprey (*Pandion haliaetus*), and carnivorous fish such as the leopard shark (*Trakis semifasciata*), smelt (*Atherinopsis sp.*), and California halibut (*Paralichthys californicus*). Marine mammals observed using the Bay waters around HPS include the California sea lion (*Zalophus californicus*) and harbor seal (*Phoca vitulina*).

4.2.1.2 Rare or Sensitive Habitats

Wetlands and mudflats are present at HPS (USGS 1980; PRC 1993c). The habitat map (see Figure 1-5) shows the location of these habitats at HPS.

Wetlands

Several small areas of wetlands have been delineated at HPS (EFA West 1991; PRC 1993c). These wetlands are located exclusively along the undeveloped southern shoreline of the shipyard (Parcel E). These areas provide the greatest ecological diversity of any habitat at the facility. Two types of wetland habitat are present in Parcel E: saline emergent wetland (coastal salt marsh) and a small area of seasonal freshwater wetland. Several small patches of saline emergent wetland are found within the intertidal zone along the San Francisco Bay shoreline edges. Plant species observed during the February 1997 field

survey include pickleweed (*Salicornia virginica*) and salt grass (*Distichlis spicata*). A small freshwater emergent wetland occurs in IR-01/21. This area is supported by a small intermittent freshwater source originating in the northwest corner of the site. Observed species include toad rush (*Juncus sp.*), umbrella sedge (*Cyperus laevigatus*), Pacific coast bulrush (*Scirpus robustus*), and rabbits-foot grass (*Polypogon monspeliensis*). Wetland habitat comprises a small percentage of the entire coverage at Parcel E (2.7 acres).

Wetlands are known to provide habitat for a variety of wildlife species. Waterfowl, shorebirds, and wading birds may use this habitat as a source of food, cover, and water. The following species were observed during the field survey: the common snipe (*Gallinago gallinago*), greater yellowlegs (*Tringa melanoleuca*), killdeer (*Charadrius vociferus*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), and great egret (*Casmerodius albus*). The abundance of shorebirds may serve as prey for raptors, such as the federally endangered peregrine falcon. Small mammals such as the raccoon and opossum (*Didelphis virginiana*) may forage in or along the edges of wetland habitat (TtEMI 1997b).

Mudflats

The mudflats at HPS are located in South Basin and India Basin. They occupy the intertidal zone exposed at low tide. The soft Bay substrate provides habitat for many invertebrates, including oligochaetes, polychaetes, crustaceans, decapods, isopods, gastropods, and bivalves. These invertebrates are preyed upon by shorebird species such as the western sandpiper (*Calidris mauri*), willet (*Catoptrophorus semipalmatus*), sanderling (*Calidris alba*), and dunlin (*Calidris alpina*), which forage extensively at low tide. Shorebirds eat a variety of invertebrate prey usually obtained from the top few centimeters of the substrate, or, less often, from the column of water overlying the substrate. Stomach contents research has shown that the gem clam (*Gemma gemma*), the polychaete worm (*Neanthes succina*), and the mud snail (*Ilyanassa obsoleta*) are common prey among many shorebirds (Tetra Tech 1994). At high tides, these invertebrates are preyed upon by fish such as sliver surfperch (*Hyperprosopon ellipticum*), cheekspot goby (*Ilypnus gilberti*), and white croaker (*Genyonemus lineatas*).

4.2.1.3 Flood Plains

According to the BER (Tetra Tech 1994), HPS does not lie within the 100-year flood plain, as defined by the USGS.

4.2.1.4 Biota

The following sections summarize available information concerning migratory birds, fisheries, marine mammals, special animals and plants, and plants or animals of public interest at HPS.

Migratory Birds

The San Francisco Estuary is a seasonal home for many birds migrating along the Pacific Flyway. Other groups of migratory birds observed at HPS include several species of waterfowl, such as the bufflehead (*Bucephala allieola*), Barrow's goldeneye (*Bucephala islandica*), lesser scaup (*Aythya affinis*), greater scaup (*Aythya marila*), surf scoter (*Melanitta perspicillata*), and American coot (*Fulica americana*); and shorebirds, such as willet (*Catoptrophorus semipalmatus*), black-bellied plover (*Pluvialis squatarola*), and long-billed curlew (*Numenius americanus*). Migratory passerine birds, such as the western meadowlark (*Sturnella neglecta*), bushtit (*Psaltriparus minimus*), brown creeper (*Certhia americana*), and ruby-crowned kinglet (*Regulus calendula*), have also been observed at HPS (PRC 1993f; HLA 1991c; ESA 1987).

Fisheries

Fisheries have been documented at HPS (California Department of Fish and Game [CDFG] 1992; ESA 1987). Common harvested species include Pacific herring (*Clupea harengus palasii*), northern anchovy (*Engraulis mordax*), topsmelt (*Atherinopsis affinis*), and California halibut (*Paralichthys californicus*).

Chinook salmon enter San Francisco Bay through the Golden Gate and mill about within the mixing waters of the Bay before making their way up the Sacramento River. Although the salmon generally stay in the northern portions of the Bay, some do get lost, stray into the South Bay, and are caught by fishermen. Incidental occurrences of salmon have been noted at HPS (Tetra Tech 1994). The CDFG does not consider Chinook salmon to be a species of special interest in the Hunters Point area (Tetra Tech 1993c).

The species assemblage represented at HPS is typical of harbor or marina settings and does not reveal the existence of any rare or endangered fish species (ESA 1987).

Marine Mammals

Marine mammals have been observed at HPS (PRC 1993f). The California sea lion (*Zalophus californicus*) and harbor seal (*Phoca vitulina*) are routinely observed in San Francisco Bay waters at HPS. These pinnepeds have also been seen feeding on schools of Pacific herring during winter in the water immediately off Parcel D at HPS.

California Special Animals

"California special animals" is a broad term used by the Natural Heritage Division of the CDFG to refer to invertebrate and vertebrate taxa of concern, regardless of their legal status. The list includes populations that are (1) rare, restricted, or declining; (2) peripheral to the main population but threatened within California; or (3) closely associated with habitats that are declining in California (such as wetland, riparian, or old growth forest habitats). The list includes species listed as endangered or proposed for listing, as well as candidate species, CDFG Species of Special Concern, and species designated as "sensitive" by federal land managers.

Several California special animals have been observed at HPS (PRC 1993d; HLA 1991a; ESA 1987). The list in Table 4-4 details species of special concern that have been observed at HPS.

California Special Plants

California special plants include species that (1) are listed as endangered or threatened by the state or federal government; (2) are candidates for listing; (3) meet the criteria for listing as described in Section 15380 of California Environmental Quality Act (CEQA) guidelines; (4) are listed in the California Native Plant Society (CNPS) as rare or endangered; (5) are rare, restricted, or declining; (6) are peripheral to the main population but threatened within California; (7) are closely associated with habitats that are declining in California (such as wetland, riparian, or old growth forest habitats); or (8) have been designated as "sensitive" by federal land managers. Several California special plants (CNPS 1989) are present at HPS, as listed in the following table (Tetra Tech 1994).

Species	Common Name	Status
Calystegia occidentialis	Morning Glory	CSP
Eriogonum nudum	Buck Wheat	CSP
Microseris douglasii var. playcarpha	Sunflower	S2S3

Notes:

CSP California Department of Fish and Game Special Plant

S2S3 Species numbers are between State Status 2, six to 20 element occurrences or 100 to 3,000 individuals or 2,000 to 10,000 acres, and State Status 2, 21 to 100 element occurrences or 300 to 10,000 individuals or 10,000 to 50,000 acres.

Plants or Animals of Public Interest

Several birds observed at or near HPS (PRC 1993e) are on the Audubon Blue List and are of importance to Audubon societies in the San Francisco Bay Area. Of the species shown below, only the red-shouldered hawk has been observed at HPS.

Species	Common Name
Podiceps auritus	Horned grebe
Buteo lineatus	Red-shouldered hawk
Circus cyaneus	Northern harrier
Asio flammeus	Short-eared owl

No plants of public interest have been identified other than the California Special Plants listed above (Tetra Tech 1994).

Threatened or Endangered Species

Threatened or endangered species listed by both the federal government and the State of California have been observed at HPS (PRC 1993e, 1993g; ESA 1987). Table 4-4 includes species already listed as threatened or endangered, as well as candidates for listing that have been observed or may be present at HPS.

4.2.2 Water Resources

This section describes surface water and groundwater resources at HPS.

4.2.2.1 Surface Water Resources

The facility borders San Francisco Bay and two freshwater streams, Yosemite and Islais Creeks, that flow into the Bay adjacent to the facility (USGS 1980). Surface water resources at HPS are limited to small groundwater seeps from exposed bedrock and the surface water in the adjacent San Francisco Bay. The Bay system, including San Pablo and Suisun Bays, covers an area of 400 square miles. The system is formed by the discharge of the Sacramento and San Joaquin Rivers, which contribute 680 billion cubic feet (ft^3) of the total 750 billion ft^3 of inflow to the Bay. Other sources of inflow include the Petaluma and Napa Rivers in the North Bay, Alameda and San Lorenzo Creeks from the East Bay, Coyote Creek and the Guadalupe River from the South Bay, and Redwood Creek and San Francisquito Creek from the Peninsula (Tetra Tech 1994).

Much of the Bay's margins have been subject to diking and filling. Wetlands, which include coastal salt marsh (present at HPS), salt flats, and seasonal fresh water (present at HPS), are only abundant in the Upper Bay and South Bay regions of the Bay Area. Many of the wetland areas in the South Bay are seasonally flooded and converted into salt flats.

Water quality problems exist in the San Francisco Bay. Most heavy metal concentrations have been reduced to normal concentrations in the last 20 years; however, point sources such as Bayshore landfills and industrial discharge outlets introduce contaminants, including heavy metals, into the Bay. Nonpoint sources, such as surface runoff, contribute soil from land erosion or construction projects, oil and grease from surface streets, and pesticides (Tetra Tech 1994).

Coastal uses near and on the Bay are regulated by the Bay Conservation and Development Commission (BCDC). The BCDC requires permits for activities such as pier construction or demolition. Discharges from point and nonpoint systems to the Bay waters are regulated by the RWQCB, San Francisco Bay region (Tetra Tech 1994).

In 1977, the State Water Resources Control Board (SWRCB) set up hundreds of mussel watch stations throughout California as part of the State Mussel Watch Program. The purpose of this program is to monitor changes in the water pollution levels by monitoring changes in the pollution concentrations in marine mussels (*Mytilus spp.*). In areas where mussels cannot be used due to low or varying salinities, freshwater clams (*Corbicula Fluminea*) are used. The State Mussel Watch Program currently maintains a large database to pinpoint areas of higher than normal levels of certain toxic pollutants (Tetra Tech 1994).

A total of 38 mussel watch stations have been set up at various locations around San Francisco Bay. These stations are monitored yearly to determine if any changes have occurred. Two stations located at the Islais Channel and at Hunters Point are within 2 miles of HPS. Monitoring results for these two sites are shown in Table 4-5 (Tetra Tech 1994).

The waters near the wetland habitat and Pier 2 are commonly occupied by large numbers of wintering ducks including bufflehead (*Bucephala albeola*), lesser scaup (*Aythya affinis*), Barrow's goldeneye (*Bucephala islandica*), and surf scoter (*Melanitta perspicillata*). From November through February, densities of up to 1,000 waterfowl per square kilometer are observed in or near the South Basin area (Accurso 1992). These ducks feed on benthic invertebrates, such as mollusks and crustaceans.

4.2.2.2 Groundwater Resources

Groundwater at HPS is present in any of three water-bearing zones. These zones are distinguished by depth and material composition. The three zones are the upper or A-aquifer, the Undifferentiated Sedimentary or B-aquifer, and the bedrock water-bearing zone. The A-and B-aquifers are separated by 5 to 60 feet of Bay Mud under most of the low-lying areas. The fine-grained portions of the Bay Mud generally act as an aquitard between the two water-bearing zones. A general description of these water-bearing zones is presented under "Hydrogeology of HPS" in Section 4.1.4.2.

Groundwater flow at HPS is complex due to the heterogeneity in the hydraulic properties of the subsurface fill materials, tidal influences, effects of storm drain and sanitary sewer systems, and variations in topography. In some areas, the groundwater flow direction in the A-aquifer has been observed to vary with tidal fluctuations, indicating groundwater exchange with San Francisco Bay (HLA 1994c).

The normal tidal range in the vicinity of HPS is approximately 6 feet. Waterfront flooding is not considered to be a problem (ESA 1987). Water levels in monitoring wells within 400 to 800 feet of the existing shoreline show evidence of direct influence by tidal action. Although no tidal influence is noted farther inland, many inland monitoring wells (greater than 800 feet from the shoreline) show infiltration of high salinity water from the Bay. This infiltration is thought to be the result of high salinity sea water migrating into and leaking from the storm drain system (HLA 1992e).

Groundwater at HPS is not used for any purpose. No irrigation or water supply wells are located on the base. The nearest public or private water supply is a spring located approximately 1 mile northwest of the

base (upgradient). This spring emanates from fractures in the Franciscan Assemblage at elevations greater than 200 feet above msl. It is being used for bottling water by Albion Mountain Springs Water Company on Innes Avenue (Navy 1986).

4.2.3 Cultural Resources

Three different types of cultural resources are discussed in this section: prehistoric and historic resources, World War II structures of significance, and Cold War Era resources.

4.2.3.1 Prehistoric and Historic Resources

The inhabitants of the San Francisco Bay Area, just prior to contact by Spanish explorers in 1770, were the Costanoan people (Moratto 1984). Few early accounts of Costanoan culture exist, although Harrington (1942), Kroeber (1925), and Levy (1978), among others, provide overviews. Estimates of the population of aboriginal people in the Bay Area at the time of Spanish contact vary from 7,000 to 10,000 (Levy 1978).

The Costanoan people followed a subsistence strategy that involved hunting and gathering, focusing primarily on the harvest of available acorns native to the surrounding hills. The buckeye, laurel, and hazelnut were also collected (Palou 1924). Grass seeds and other seeds were also gathered, and there is evidence that areas were frequently burned over to provide for ample seed crops the following season (Kroeber 1925). Bay and estuarine resources played a very important role in Costanoan subsistence. Shellfish, sturgeon, and salmon were procured, as were seals and an occasional whale (Kroeber 1925).

The introduction of the Spanish missionary system to the Bay Area in the 1770s led to the rapid demise of the Costanoan people. During the Missionary Period (1770 to 1835), the Costanoans experienced the demise of their lifestyle and culture through both "missionization" and disease. The Native American population is believed to have declined by 80 percent in the 60 years following Spanish occupation of the region (Cook 1943). Secularization of the missions in 1835 also proved disastrous to the remaining Costanoans as they sought to replace their mission way of life by working on newly granted ranchos in the area. In 1971, the few remaining descendants of the Costanoan people established the Ohlone Indian Tribe and were granted title to the Ohlone Indian Cemetery near Mission San Jose, the resting place of their ancestors who died during the Mission Period (Levy 1978).

Commercial boat building began in the south part of San Francisco during the 1860s. Photographs taken of the Point Avisadero side of Hunters Point circa 1870 indicate that the infant shipyard consisted of a single large dry dock (Dry Dock 1) and several sheds and outbuildings within a board fence. This area was located in Parcel C.

During the period from 1850 to 1890, San Francisco was experiencing tremendous growth associated with the gold and silver rush, increased Chinese immigration, and the building of the transcontinental railroad. In 1850, the population of San Francisco was less than 35,000. By 1860, the population had grown to 56,800, and by 1870 this number had more than doubled to over 135,000. The 1890 census indicated that the city's population had more than doubled again to over 298,000 residents.

Other boatyards developed during the 1890s northwest of Point Avisadero, outside the Hunters Point Naval Shipyard. continued in use until about 1940. There is a possibility that subsurface remains from this era may exist within Parcel B (Tetra Tech 1994).

As discussed under "Base History" in Section 3.1 of Chapter 3, the Chinese shrimp fishing camps, the servicing of the Great White Fleet on its round-the-world cruise, and the three original Hunters Point dry docks also added to the historical significance of the Hunters Point area. The only historical resources from this era still in existence are Dry Docks 2 and 3. In 1989, the area around Dry Docks 2 and 3 in Parcels B and C was designated as the Hunters Point Commercial Dry Docks Historical District. Significant structures included within this district are Dry Docks 2 and 3, the one-story brick pumphouses (Buildings 140 and 205), the one-story brick gatehouse (Building 204), the one-story brick tool and paint building (Building 207), and the seawalls and wharves connected with the dry docks. These buildings and structures have been determined to meet the requirements for eligibility to the National Register of Historic Places (Urban Programmers 1989).

4.2.3.2 World War II Structures of Significance

From 1939 to 1945, acquisition and development of Hunters Point by the Navy progressed at a frantic pace. A total of $87,182,000 was invested in acquisition of 585 acres and in construction of buildings and structures. The majority of the existing structures were built during this 6-year period. Exceptions to this include Dry Docks 2 and 3 and associated structures, as well as a few buildings in the residential and administrative sections of Parcel A.

The most significant achievement during the World War II period was the construction of Dry Dock 4 and its support buildings. Construction was completed in less than 9 months. During this time, about 5 million yd^3 of earth was excavated from the area and deposited as fill north and south of Dry Docks 2 and 3 and used to construct a cofferdam in front of Dry Dock 4 (Urban Programmers 1989). Dry Dock 4 is still owned by EFA West and is being operated by Astoria Metals Corporation (Astoria Metals). Dry Dock 4 has been identified as a World War II structure of significance. Dry Docks 2, 3, and 4 have been determined to meet the criteria for inclusion in the National Register of Historic Places (Urban Programmers 1989).

The 1989 survey of historical resources by Urban Programmers also identified the 450-ton bridge crane and the ordnance and optical building (Building 253) as the only other building and structure at HPS with the potential to qualify for the National Register of Historic Places. Subsequently, the Navy reevaluated the 450-ton bridge crane and determined, in consultation with the State Historical Preservation Office, that the removal and destruction of the overhead traveling crane all but destroyed the property's integrity.

4.2.3.3 Cold War Era Resources

The NRDL evolved as a separate command under the auspices of the shipyard in September 1950 (Urban Programmers 1989). The mission was "to conduct investigations and develop information concerning effects and consequences of dispersed fissionable materials, fission products, and other radioactive substances" (PRC 1995a). This research centered around the optimal use of naval forces in a radiation environment.

Although no structures in Parcels B and C have been identified as Cold War Era structures of significance, the optical and ordnance building (Building 253) completed in 1947 might have been deemed significant, since it is an award-winning design of an important 20th century architect, but years of neglect have left it all but a ruin. This building will have to be reevaluated in consultation with the State Historical Preservation Office because it may qualify for the National Register of Historic Places.

The NRDL used several of the buildings in Parcels D and E during the 1950s and 1960s. These include Buildings 364 in Subparcel S-39 (chemistry: 1951 to 1969); Buildings 507, 508, and 509, formerly located in Subparcel S-44 (biology: 1951 to 1955); Buildings 506 and 510, formerly located in Subparcel S-44; and Buildings 707 and 708, located in Subparcel S-35 (animal colony and biomedical facility).

4.2.4 Archeological Resources

In 1909, N.C. Nelson published *Shellmounds of the San Francisco Region*, in which he described the prehistoric shellmounds he identified and mapped throughout the Bay Area. Two of these shellmounds were located on Hunters Point (Nelson 1909). Development of the naval shipyard in the 1940s leveled the land mass and actually dug into its center at Dry Dock 4. The obliteration of these sites was confirmed by the State Historical Preservation Office in a November 4, 1987 letter to the WESTDIV Commander. This letter stated: "The field visit to Hunters Point by the Office of Historical Preservation staff and the excellent historic photographs that you have submitted are clear evidence of the extensive modification of the land surface on, and bay bottom surrounding, Hunters Point. This evidence convinces us that there is no potential for existing, intact archeological deposits within any area that would be affected by proposed project construction or maintenance. The prehistoric shellmounds recorded by N.C. Nelson in 1907 and evidence of the nineteenth century Chinese shrimp fishing camps at Hunters Point have undoubtedly been destroyed or displaced by the massive land alteration and construction of the last half century."

By-products of the boat-building industry in the mid- to late-1800s were the abandoned ships left in the Bay Mud, along the shoreline, and in the coves of Hunters Point. Parts were sometimes salvaged or wood was reclaimed; however, most were left to deteriorate. The hulls, buried in landfill or mud, could be uncovered if construction disturbs their resting place (Urban Programmers 1989). None of these hulls have been noted during activities at Parcels A through E.

4.3 UTILITIES

Utilities at HPS include a storm drain system, a sanitary sewer system, a saltwater system, a steam heating system, an electrical power system, a street lighting system, a natural gas system, and a potable water system. Some of these systems are no longer functioning; all are discussed in the following sections.

4.3.1 Storm Drain System

About 90 percent of Parcels A through E are serviced by storm sewers (see Figure 4-6). Areas without storm sewers are those where surface runoff is tolerable (Tetra Tech 1994). The storm sewers drain primarily in sheet-flow by gravity into San Francisco Bay from either the highlands of Parcel A to the surrounding lowlands, or from the lowlands themselves. Only 10 percent of HPS, composed of

undeveloped shoreline, some pier areas, and a parking lot, are not served by the storm drain system (PRC 1995a).

The storm sewer system consists of concrete and vitrified clay sewers ranging in size from 8 to 72 inches in diameter (YEI Engineers, Inc. [YEI] 1988). Nine major and 10 minor subsystems are present, each with its own tributary drainage area and Bay outfall. Most of the system was built between 1942 and 1958 as a combined sanitary and storm sewer system. In 1958, partial segregation into separate storm and sanitary systems began. In 1973, a major storm sewage separation project was undertaken, which shaped the existing storm sewer system. The separation of the storm drain and sanitary sewer systems was largely completed in 1976 when a follow-up project was undertaken (YEI 1988). Inspections conducted by YEI in 1988 and HLA in 1993 (HLA 1993a) indicated that the system was generally in fair physical condition, with portions of the system being in poor physical condition. There are corroded pipe and manhole walls, leaky and broken joints and pipes, and improperly disconnected pre-1976 flow diversion structures. The system's physical integrity is subject to deterioration as a result of the presence of corrosive organic chemicals, differential settlement of soil, seismic ground shaking, and steep slopes.

Hydraulically, the system was designed for a 2-year storm, except for isolated and underdesigned pockets. Tidewater flooding occurs in low-lying areas throughout the site. The storm sewer lines were included in the SI program of the IRP as preliminary assessment (PA) site 50 (PA-50) because a potential for release of contaminants to the environment from the lines was believed to exist. Previous investigations indicated that some of the lines were used for the disposal of hazardous materials (HLA 1990), and sediment samples collected during a storm water investigation detected the presence of various metals, VOCs, semivolatile organic compounds (SVOC), PCBs, and petroleum hydrocarbons (HLA 1991b). The storm drain investigation included inspection of the lines and sediment collection from manholes, catch basins, and access vaults along main trunk lines. Three additional sediment samples were collected from access vaults along branch lines as part of the PA-26 investigation; 10 were similarly collected at PA-57. In addition, approximately 3,400 feet of sewer line was video-surveyed to identify breaks in the lines. Where video-surveying indicated that the lines were in poor condition (for example, cracked, separated at joints, or subject to groundwater infiltration) and potentially leaking contaminated sediment or water to the surrounding soil, test pits were excavated to inspect and sample the soil at or below the line. Four test pits were excavated at PA-50 in Parcel B.

4.3.1.1 Parcel A

Storm water runoff from the drainage areas in Parcel A flows from Parcel A through the storm drains into adjoining parcels, ultimately entering the Bay through various outfalls (see Figure 4-6). The historical land use of the areas drained by the Parcel A storm drain system has been largely residential, with lesser industrial use such as office and warehouse use. Observations of the storm drain system indicate that little or no sediment is present in the Parcel A system. Visual evidence of contamination was minimal except for a trace sheen on stagnant water near Pump Station A in Building 819. Further information about the condition of the storm drains in Parcel A is available in the Parcel A SI report (PRC 1993b) and in the Parcel A RI report (PRC 1995f).

In 1994 and 1995, Navy Public Works Center (PWC) removed approximately 32.2 yd^3 of sediment from the Parcel A storm drain system; contamination in the sediment was minimal. The sediment was disposed of off site (HLA 1996a).

4.3.1.2 Parcel B

Storm water that collects in Parcel B is discharged to the Bay from storm water outlets at eight locations along the waterfront. The largest of these outlets (39-inch diameter) serves 40 percent of Parcel B and nearly 50 percent of Parcel A (see Figure 4-6). This outlet discharges into the Bay adjacent to Building 144. A slightly smaller outlet (33-inch diameter) serves 30 percent of Parcel B and 20 percent of Parcel A. This outlet discharges to the Bay adjacent to Building 133. A third outlet (24-inch diameter) serves 15 percent of Parcel B and discharges to the Bay adjacent to Building 159. The remaining 15 percent of Parcel B is served by five small outlets (8-inch diameter) located at various points along the shoreline.

Six storm drain sediment samples and four soil samples (one from each test pit) were collected from the storm drains in Parcel B. Although many of the storm drain sediment samples were found to have concentrations of Aroclor-1260 and lead that exceeded criteria such as health-based levels (HBL), Hunters Point ambient levels (HPAL), or preliminary remediation goals (PRG) in soil, sampling at pipeline breaks indicated that contaminants have not leaked to the environment. An HBL is an estimate of the maximum concentration of a chemical that a person can be exposed to without significant effect. HBLs may be used as a reference for determining any removal (early action) or interim remedial (temporary remedy) needs. HPALs are levels of metals in soil that are naturally occurring at HPS. PRGs are initial cleanup goal concentrations that are protective of human health and the environment. Recommendations for additional work specific to Parcel B include evaluating the configuration of the system at contaminated sites, investigating the potential for releases, removing contaminated sediment from the system, and completing the separation of the sanitary sewer and storm drain systems. All known interconnections between the two systems have been corrected under the Navy's Storm Water Program. Should any additional interconnections be found in the future, they will be corrected immediately (EFA West 1996). Further information about the condition of the storm drains in Parcel B is available in the Parcel B SI and RI reports (HLA 1994b; PRC 1996a).

In 1997, the Navy conducted a nontime-critical removal action that involved removing contaminated sediments from the storm drain system in Parcel B. Approximately 251 yd^3 of contaminated sediments was removed from 9,810 linear feet of Parcel B storm drains (IT Corporation [IT] 1997c). The sediment was disposed of off site.

4.3.1.3 Parcel C

Storm water in Parcel C is discharged from storm water outlets at eight locations along the waterfront (see Figure 4-6). The two largest outlets (30-inch diameter) served 75 percent of Parcel C and a small portion of Parcel A and Dry Dock 4. These outlets discharge into the north berthing slip at Berths 3 and 5. The remaining 75 percent of Parcel C is served by six small storm water outlets located at various points along the shoreline. These outlets range in size from 10 to 18 inches in diameter.

SIs conducted on the storm drains in Parcel C consisted of inspecting manholes, performing video-surveys, collecting 11 sediment samples from catch basins or manholes, excavating three test pits and collecting soil samples, and drilling and sampling two soil borings. Field inspections and video-surveys indicated that sediment is accumulating in the system, and very poor conditions occur

locally (HLA 1994a). Sediment samples contained organic and inorganic constituents exceeding various criteria. Soil sampling at pipeline breaks indicated that contaminants have not leaked to the environment. Recommendations for additional work specific to Parcel C include the removal of contaminated sediment from the system. Further information on the condition of the storm drains in Parcel C is available in the Parcel C SI and RI reports (HLA 1994d; PRC 1997c).

In 1997, the Navy conducted a nontime-critical removal action that involved removing contaminated sediments from the storm drain system in Parcel C. Approximately 454 yd^3 of contaminated sediments was removed from 14,885 linear feet of Parcel C storm drains (IT 1997d). The sediment was disposed of off site.

4.3.1.4 Parcel D

Storm water in Parcel D is discharged from storm water outlets at 13 locations along the waterfront (see Figure 4-6). The largest outlet (42-inch diameter) serves 20 percent of Parcel D and discharges into the Bay adjacent to Berth 15. A smaller outlet (27-inch diameter) serves the shoreward half of the Regunning Pier and discharges into the Bay at Berth 15. Another smaller outlet (24-inch diameter) serves about 5 percent of Parcel D, 40 percent of Dry Dock 4, and 10 percent of Parcel A and discharges into the Bay at Berth 14. A third smaller outlet serves 2 percent of Parcel D and 30 percent of Dry Dock 4 and discharges into the Bay at various points along the shoreline. The sizes of these outlets range from 6 to 12 inches in diameter. The remaining 33 percent of Parcel D is connected to storm water systems discharging in Parcel E.

SIs conducted on the storm drains in Parcel D consisted of inspecting manholes, performing video-surveys, collecting 19 sediment samples from catch basins or manholes, excavating four test pits and collecting soil samples, and drilling and sampling two soil borings. Field inspections and video-surveys indicated that sediment is accumulating in the system and very poor conditions occur locally (HLA 1994a). Sediment samples contained organic and inorganic constituents exceeding various criteria. Analytical results of soil sampling at pipeline breaks indicated the presence of organic and inorganic constituents exceeding various criteria. Soil sampling at pipeline breaks indicates that contaminants have not leaked to the environment. Recommendations for additional work specific to Parcel D include removing contaminated sediment from the system, repairing broken pipes, and investigating and completing the separation of the sanitary sewer and storm drain systems. All known interconnections between the two systems have been corrected under the Navy's Storm Water Program.

Should any additional interconnections be found in the future, they will be corrected immediately (EFA West 1996). Further information on the condition of the storm drains in Parcel D is available in the Parcel D SI and RI reports (HLA 1994e; PRC 1996e).

In 1997, the Navy conducted a nontime-critical removal action that involved removing contaminated sediments from the storm drain system in Parcel D. Approximately 850 yd^3 of contaminated sediments was removed from the 27,044 linear feet of Parcel D storm drains (IT 1997d). The sediment was disposed of off site.

4.3.1.5 Parcel E

Parcel E has three storm water discharge outlets (see Figure 4-6). All three of these outlets discharge into the Bay at the southern corner of the site near Berths 29 and 36. The largest of these outlets (72-inch diameter) serves 98 percent of Parcel E and 33 percent of Parcel D, and 20 percent of Parcel A. This system represents three smaller systems that used to discharge into the South Basin but were combined into a single system and rerouted in 1975. The remaining two outlets serve only about 2 percent of Parcel E and are 6 and 8 inches in diameter.

In general, the storm drain system in Parcel E is in relatively good condition. The video-surveys indicated the presence of small cracks and minor separation at joints throughout much of the Parcel E storm drain system; major breaks were infrequent (HLA 1994a). Further information on the condition of the storm drains in Parcel E is available in the Parcel E SI and RI reports (HLA 1994f; TtEMI 1997b).

In 1997, the Navy conducted a nontime-critical removal action that involved removing contaminated sediments from the storm drain system at Parcel E. Approximately 282 yd^3 of contaminated sediments was removed from 13,170 linear feet of Parcel E storm drains (IT 1997d). The sediment was disposed of off site.

4.3.2 Sanitary Sewer System

The existing sanitary sewer system (see Figure 4-6) is a gravity sewer and pump station system and was originally part of a combined sanitary and storm drain system installed in the 1940s (YEI 1988). Projects to separate the sanitary and storm drain systems were completed in 1958, 1973, and 1976. The separation of the sanitary sewer and storm drain systems was largely completed in 1976 when a follow-up project was undertaken (YEI 1988). Because the existing sanitary sewer system was designed to handle both

storm and sanitary flows, many of the system pipes are substantially oversized. This large size results in undesirably low flow rates, which in turn causes sedimentation of solids in the pipelines.

The HPS sanitary sewer system consists of 10 major reaches of pipe (Reaches 1 through 10) that converge to the main pump station, Pump Station A, located in Building 819 in Parcel A. From this pump station, wastewater is discharged through a 24-inch force main on Crisp Avenue and connects to the City of San Francisco wastewater system at Griffith Street for treatment at the Southeast Wastewater Pollution Control Plant (SWPCP). This plant, a publicly owned treatment works (POTW), is 1.1 miles north of the HPS main gate at Innes Avenue. According to YEI engineers, in 1988 the main pump station needed major repair work to bring it up to current design and safety standards for an installation of this type.

The condition of the sanitary sewer system varies from good to very poor. Portions are in poor mechanical shape, due largely to differential settlement, lack of maintenance and cleaning, and age. The older pipe is in the worst condition. The newer pipe (installed in 1976) is generally in good condition, except where differential settlement has caused breakage and separation of joints. The 1988 inspection by YEI noted several lift stations in need of repair (YEI 1988). All of the lift stations at HPS, other than Pump Station A, are very small and have a minor impact on the collection system.

The flow tests conducted on the system by YEI in 1988 indicated ascending groundwater inflow problems in the system, due largely to the numerous piping breaks throughout the system (YEI 1988). Actual flow measurement tests were run at Pump Station A. These tests were run under conditions ranging from normal dry weather to normal wet weather. The measurements indicated that a peak of approximately 1.8 million gallons per day (gpd) of groundwater infiltration could be expected under maximum wet weather conditions, as compared to only 245,000 gpd of actual sanitary sewage flow (Tetra Tech 1994).

Although the current pumping rates for the sanitary sewers are unknown, the capacity for sewage conveyed through Pump Station A is designed for about 20,000 tenants (PRC 1995g). Fewer than 2,000 tenants are currently present at HPS, and groundwater is likely captured by the sewer system and pumped through the sewer line system and discharged for treatment at SWPCP. Direct flow measurements at Pump Station A in 1987 during dry and light rain weather conditions confirm severe infiltration problems in the sanitary sewer system. Projected over 24 hours, the Pump Station A pumping rate was 0.22 to 0.29 million gpd, while for light rain it was 1.0 million gpd. This infiltration is thought to occur through two mechanisms: (1) direct communication with groundwater from adjacent saturated soil, and (2)

interconnections with storm water sewer lines that become flooded due to groundwater infiltration and inoperable tidal control structures. Moreover, measurements of groundwater levels across HPS reveal localized groundwater profiles in some areas that are opposite to the general trend of groundwater flowing toward San Francisco Bay. These anomalies appear to be influenced by the pumping from the sewer line system. The most striking example is the strong inland hydraulic gradient that exists from the Bay at the shoreline in Parcel D toward Parcel A. The groundwater profile in Parcel D is likely caused by the very poor condition of the 24-inch-diameter sanitary sewer line and by interconnections with the storm drain lines along "I" Street, such as leakage from the storm drain above to the sanitary sewer lines below. The result is that tidal waters enter the storm drains and recharge groundwater, and the sanitary sewer lines below the groundwater drain the groundwater (PRC 1995g). Inspection of the sewage collection system by YEI in 1988 and HLA in 1993 (HLA 1993b), combined with computer model simulations run by YEI in 1988, indicate that the system is in poor condition (YEI 1988). The sanitary sewer collection system appeared to have many sags and dips in the sewer alignments, broken joints, eroded pipe bottoms, infiltration points, damaged manholes, and construction deficiencies (HLA 1994c). Records reviewed during the IAS in 1984 indicated that substantial amounts of industrial waste flowed into the sanitary sewer system during past operations at the site (NEESA 1984). Existing sewage flow is treated at SWPCP, located at 75 Phelps Street, San Francisco. The facility receives sewage from other districts, in addition to the Hunters Point/Bayview District. The average sewage gravity flow recorded is 20 million gpd (Tetra Tech 1993b, 1994).

The sanitary sewer lines were included in the SI program because a potential for release of contaminants to the environments from the lines was believed to exist. Previous investigations indicated that the lines were in poor condition and that discharges of industrial waste were occurring to the system (YEI 1988). During the SI, the system was inspected and the potential for releases of contaminants to the environment was evaluated in order to determine the necessity of a RI and removal of the system.

4.3.2.1 Parcel A

Visual observations of the sanitary sewer system indicated minimal evidence of contamination and elevated organic vapor readings, most likely due to accumulation of sewer gases in active portions of this system. The only contamination associated with the Parcel A sanitary sewer system was detected in sediments in sewer catch basins beneath Coleman Street, where off-site transport of pesticides and herbicides was suspected (PRC 1993b).

The Navy conducted maintenance activities that involved cleaning out the catch basins and storm lines of the storm drain system in Parcel A. The amount of sediment present in the storm drain catch basins was minimal. In addition, sediment sampling was proposed during the wet and dry seasons to confirm the effectiveness of maintenance activities.

The Parcel A SI report concluded that the storm drain system did not contain substantial contamination (PRC 1993b). Further information on the condition of the sanitary sewer system in Parcel A is available in the Parcel A RI report (PRC 1995f).

4.3.2.2 Parcel B

The sanitary sewer system in Parcel B consists of 4- to 21-inch-diameter pipes, which merge together into a single 21-inch pipe that exits the parcel at the corner of Fisher Avenue and Lockwood Street.
In addition to sanitary flows generated from buildings within the parcel, additional flows are added to this system from a 10-inch pipe that serves portions of Parcel A, from two sewage pumps stations located on Piers 1 and 2, and from a sewage pump station located adjacent to Dry Dock 3 (Reaches 1, 2, and 10). These pump stations provide sewer services to vessels berthed at the piers and the dry dock.

A total of 36 vaults in Parcel B were inspected during the SI (HLA 1994b). In addition to an inspection of the physical condition of the vaults and flow condition of the lines, air space was monitored for organic vapors. Sewer vaults in the lowlands near the Bay are within the area of tidal influence and can be inundated by Bay water at high tides. During low tides, there is the potential for flow out of the system, possibly transporting contaminants out the system. Two sewer vaults in Parcel B, located in the lowlands, were identified as having such flow. Two monitoring wells were installed near these vaults (one at each vault) to evaluate groundwater quality and the potential for flow into and out of the system at these points. No visible contamination other than sewage was observed in the lines. There is no evidence of chemical contaminants in the sanitary sewer system in Parcel B. However, water-level elevation contour maps and sewer water analytical results indicate that the system and backfill appear to act as a sink and are possibly collecting and transporting groundwater from VOC plumes at IR-06. Recommendations from the SIs included confirming that the backfill acts as a migration pathway and identifying source areas to the sanitary sewer system. Further information on the condition of the sanitary sewer system in Parcel B is available in the Parcel B SI and RI reports (HLA 1994b; PRC 1996a).

4.3.2.3 Parcel C

The sanitary sewer system in Parcel C consists of 4- to 21-inch-diameter pipes. Approximately 90 percent of the sewage system in this parcel merges together into a single 21-inch pipe that exits the parcel at the corner of Fisher Avenue and Spear Avenue (see Figure 4-6). A smaller sewage system (10-inch-diameter pipe) covering about 10 percent of the parcel merges with the system from Parcel B at the corner of Fisher Avenue and Lockwood Street. In addition to sanitary flows generated from buildings within the parcel, additional flows are added to this system from two sewage pump stations located adjacent to Dry Dock 3. These pump stations provide sewer services to vessels berthed in Dry Dock 3.

Forty vaults in Parcel C were inspected during the SI (HLA 1994d). In addition to an inspection of the physical condition of the vaults and flow condition of the lines, air space was monitored for organic vapors. Sewer vaults in the lowlands near the Bay are within the area of tidal influence and can be inundated by Bay water at high tides. During low tides, there is the potential for flow out of the system, possibly transporting contaminants out of the system. Two monitoring wells were installed near vaults to evaluate groundwater quality and the potential for flow into and out of the system at these points. One sewer vault was identified as having such flow. No visible contamination other than sewage was observed in the lines. Analysis of sewage fluids indicated the presence of metals and VOCs above the screening criteria. Analyses of soil and groundwater indicated metals, VOCs, SVOCs, PCBs, petroleum hydrocarbons, and coliform above the screening levels in the sanitary sewer system.

Recommendations from the SI and RI reports suggested further evaluation of the sanitary sewer system in Parcel C for possible remedial actions. Further information on the condition of the sanitary sewer system in Parcel C is available in the Parcel C SI and RI reports (HLA 1994d; PRC 1997c).

4.3.2.4 Parcel D

The sanitary sewer system in Parcel D consists of 4- to 24-inch-diameter pipes. All of the sewer pipes drain from the south to the north, where they connect into a 33-inch main line beneath Spear Avenue. In addition to sanitary flows generated from buildings within the parcel, additional flows are added to this system from four sewer lines that extend into Parcel E. This system also connects to two sewage pump stations located on the Regunning Pier. The pump stations provide sewer services to vessels berthed at piers near the Regunning Pier.

Forty-nine vaults in Parcel D were inspected during the SI (HLA 1994e). In addition to an inspection of the physical condition of the vaults and flow condition of the lines, air space was monitored for organic vapors. Sewer vaults in the lowlands near the Bay are within the area of tidal influence and can be inundated by Bay water at high tides. During low tides, there is the potential for flow out of the system, possibly transporting contaminants out of the system. Seven monitoring wells were installed near vaults to evaluate groundwater quality and the potential for flow into and out of the system at these points. Although inorganic compounds were detected in groundwater at one location at concentrations above the maximum contaminant levels (MCL), no sewer vaults were identified as having flow into the groundwater. The MCL is a drinking water quality standard representing a concentration that is protective of human health and were established under the Safe Drinking Water Act. No visible contamination other than sewage was observed in the lines. Metal concentrations in soil samples collected during the RI exceeded the screening criteria. The RI report suggested further evaluation of the sanitary sewer system in Parcel E for possible remedial action. Further information regarding the condition of the sanitary sewer system in Parcel D is available in the Parcel D SI and RI reports (HLA 1994e; PRC 1996e).

4.3.2.5 Parcel E

The sanitary sewer system in Parcel E consists of 4- to 21-inch-diameter pipes. All of the sewer pipes connect into the sewer system in Parcel D. Approximately 20 percent of the area of Parcel E is served by sanitary sewer pipes; the remaining area is undeveloped and does not require sanitary sewer connections.

Twelve manhole vaults were inspected in Parcel E during the SI (HLA 1994f). In addition to an inspection of the physical condition of the vaults and flow condition of the lines, air space was monitored for organic vapors. One monitoring well was installed to evaluate whether the sanitary sewer system is contaminating groundwater adjacent to the lines. No organic compounds were detected in the monitoring well. Nickel and cyanide were detected below the screening criteria. Fecal coliform was detected in the well at concentrations similar to those found in sanitary sewer samples taken from other parcels. The SI concluded that fluid exchange in Parcel E between the pipeline and the surrounding environment may be occurring along sections of poor pipe integrity. Groundwater levels are above the sewer pipeline, resulting in depression of the water table adjacent to the sanitary sewer along "I" Street. No further removal actions are planned for the sanitary sewer system in Parcel E. Further information regarding the condition of the sanitary sewer system in Parcel E is available in the Parcel E SI and RI reports (HLA 1994f; TtEMI 1997b).

4.3.3 Steam Heat System

Much of HPS is underlain by steam lines installed in the 1940s and 1950s to provide steam heat to selected buildings and ships docked at the facility (see Figure 4-6). Portions of the system were used until as late as 1984; it is no longer in use. This system includes up to three types of pipe (steam, condensate return, and pump return) within a 3-foot by 4-foot concrete trench (utilidor). Steam pipes in many areas of HPS are covered with asbestos insulation.

The steam heat system was not operated when Triple A occupied the site (1976 to 1986); however, it is suspected that Triple A used sections of the steam system to convey waste oils containing PCBs from Dry Dock 4, Building 521 (Parcel E), and Berth 29 (Parcel D) to Tank S-505 (Parcel E). The lines through which the oil was pumped appear to be only those segments of the system that link these areas. The affected lines are within Parcels C (the southeast corner of Dry Dock 4), D, and E, and have been included in the IRP as IR-45.

The scope of work for the SI included verifying the system map and inspecting the pipelines; accessing the interior of the pipelines to collect samples of pipe contents; and trenching and soil sampling in and adjacent to the utilidor where oil was identified in the lines. Inspections of pipeline exteriors indicated areas of poor condition. Pressure testing of the system might have created a release situation and therefore was not conducted.

4.3.3.1 Parcel A

Parcel A is located at the extremes of the steam lines and at the highest elevations, and is therefore not subject to gravity inflows from the remainder of the system. Visual inspections of the system were conducted at two access vaults within Parcel A and several steam lines leading to Parcel A from Parcels B, C, and D. The results indicated no evidence of any oil, and both the steam and condensate lines were dry. Friable asbestos lagging on the steam pipes was noted in one of the access vaults. The Parcel A SI report recommended no further investigation of the steam lines in Parcel A (PRC 1993b).

4.3.3.2 Parcel B

The steam system in Parcel B serves Buildings 103, 104, 112, 113, 115, 116, 117, 119, 121, 123, 129, 132, 133, 146, and 154. The steam line service also includes Docking Berths 55 through 58, 82 through 84, and Dry Docks 5, 6, and 7. Steam service to the main portion of Parcel B is supplied

through two pipes that enter the parcel across Galvez Avenue and Robinson Street. A small steam network also serves the north side of Dry Dock 3. This system enters the parcel around the front of Dry Dock 3.

SIs conducted on the steam lines in Parcel B consisted of exterior inspections of the system at 10 locations, video-surveys of the interior of the lines at four locations, and the collection of one water sample from the steam line. Exterior inspections did not reveal any evidence of leakage from the system; however, friable asbestos pipe lagging was observed on many of the pipes. The video-surveys indicated no evidence of oil contamination. Analysis of the water sample indicated the presence of metals (barium), VOCs, polynuclear aromatic hydrocarbons (PAH), and petroleum hydrocarbons at concentrations above the screening criteria. The source of these contaminants is unknown; however, they may result from Triple A's use of the steam lines to transport waste oil. No portion of the steam line system is currently in use. The system is proposed to be removed during the remedial action. Further information on the condition of the steam lines in Parcel B is available in the Parcel B SI and RI reports (HLA 1994b; PRC 1996a).

4.3.3.3 Parcel C

The steam line system in Parcel C serves Buildings 205, 217, 231, 241, 251, 253, 271, 272, and 275. This system also serves Dry Docks 2 and 3 and Docking Berths 1, 2, 5, 6, 7, 8, and 9. Service to the north side of Dry Dock 5 originates from the Parcel C network. Steam services to the parcel cross from Parcel B at the corner of Robinson Street and Lockwood Street and cross from Parcel D at the intersection of Spear Avenue and Fisher Avenue.

SIs conducted on the steam lines in Parcel C consisted of exterior inspections of the system at 14 locations, video-surveys of the interior of the lines at six locations, and collection of two water samples from the steam lines. Exterior inspections did not reveal any evidence of leakage from the system; however, friable asbestos pipe lagging was observed on many of the pipes. The video-surveys indicated no evidence of oil contamination. Analysis of the water samples indicated the presence of metals and VOCs at concentrations below the screening criteria. Analysis of soil associated with the steam lines indicated the presence of metals and one SVOC above the screening criteria. No portion of the steam line system is currently in use; therefore, the steam line system has been proposed for removal during the remedial action. Further information on the steam lines in Parcel C is available in the Parcel C SI and RI reports (HLA 1994d; PRC 1997c).

4.3.3.4 Parcel D

The steam line system in Parcel D serves Buildings 274, 302, 323, 324, 351, 364, 365, 369, 370, 400, 401, 406, 411, 413, 414, 418, and 530. Service is also supplied to Docking Berths 10 through 14, 22 through 29, and the Regunning Pier, as well as a small portion of the neighboring Parcel E across "H" Street and Mahan Street. Connections to buildings within Parcel A exist across Spear Avenue.

SIs conducted on the steam lines in Parcel D consisted of exterior inspections of the system at 25 locations, video-surveys of the interior of the lines at 10 locations, collection of seven water samples from the steam lines, excavation of 14 test pits adjacent to the steam lines, collection of 11 soil samples from the test pits, and hand-augering of borings through the backfill adjacent to the steam lines. Visible oil staining or fluid was noted outside the steam line process piping at six locations. In addition, friable asbestos pipe lagging was observed on many of the pipes. Oil was evident in the backfill around the utility lines at the intersection of Cochrane and Manseau Streets. The video-surveys indicated the presence of water at seven locations and oil at one location. Analysis of the water samples indicated the presence of metals, VOCs, petroleum hydrocarbons, and oil and grease at concentrations below the screening criteria. The oil found in the pipe at one location contained high concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) (compounds associated with gasoline), and petroleum hydrocarbons. No portion of the steam line system is currently in use; therefore, the steam line system has been proposed for removal during the remedial action. Further information on the condition of the steam lines in Parcel D is available in the Parcel D SI and RI reports (HLA 1994e; PRC 1996e).

4.3.3.5 Parcel E

The steam line system in Parcel E is limited to the area around the former power plant (Building 521). Several former buildings in this area were once connected to the system but have been demolished and the steam lines capped. Docking Berths 30 through 35 are also connected to the steam system.

SIs conducted on the steam lines in Parcel E consisted of verification of the steam line map by tracing the utilidor covers and inspecting the utilidor and exterior of the lines at four access points in Parcel E and along a suspected line south of Building 510. Five test pits were excavated adjacent to the utilidors that contained or were suspected to contain oil. In addition, two water samples were collected from condensate return lines and pipe interiors were inspected to evaluate whether oil was present.

Observations made during the Parcel E SI (HLA 1994f) and the Parcel D SI (HLA 1994e) provided evidence that oil was pumped from Dry Dock 4 to Tank S-505. This waste oil was piped southwest on Manseau Street and then southeast along "H" Street, where it entered Parcel E near Building 507. In Parcel E, the waste oil continued southeast on "H" Street to a pipeline intersection, where it flowed southwest past Building 521 to Tank S-505.

Metals detected in soil associated with the steam lines in Parcel E were above the screening criteria. No portion of the steam line system is currently in use; therefore, the system has been proposed for removal during the remedial action. Further information on the condition of the steam lines in Parcel E is available in the Parcel E SI report (HLA 1994f).

4.3.4 Electrical Power System

The Pacific Gas and Electric Company (PG&E) supplies electricity to HPS. Currently, HPS is serviced by two electrical distribution systems (see Figure 4-7). The older and more extensive system, a 12.47-kilovolt (kV) system installed in 1974, provides unmetered service to the few remaining Navy operations at the facility. In 1987, a second distribution system was installed to provide metered service to the non-Navy tenants at the facility.

The incoming electrical service consists of two 15-kV-rated power lines. Both lines originate from the PG&E Hunters Point Power Plant switchyard and terminate at HPS's main substation "AA." PG&E's overhead lines are rated at 832 amperes (amps) (18 megaVolt-amps [MVA]) or 699 amps (15 MVA). The present available PG&E capacity for HPS is 13 MVA with 8.5 MVA backup (YEI 1988).

In 1972, a major 12.47-kV primary electrical distribution improvement project was undertaken, which set the 12.47-kV system loop configuration as it exists today. Five 12.47-kV major substations were installed and all of the existing 2.4-kV switchgear in existence prior to this project was reused. Each major substation feeds adjacent utilization substations or switching stations through 15-kV-rated cables in underground duct banks. At the utilization substations or switching stations, transformers are installed to convert 12.47-kV to 2.4-kV or 480 volts (V). The 2.4-kV system is primarily used as a utilization voltage for running motors, compressors, and pumps. In general, the 12.47-kV distribution system is in satisfactory condition; however, poor maintenance is apparent in some equipment. The Navy's 12.47-kV electrical system is being proposed to be de-energized. PG&E will provide direct service to Dry Dock 4 and several other buildings.

4.3.5 Natural Gas System

Historically, natural gas has been supplied to HPS from PG&E at two service entrance locations: one along Crisp Avenue near Building 816, and one at the corner of Galvez and Donahue Streets. The natural gas distribution system is shown on Figure 4-7. After the Loma Prieta earthquake in October 1989, the natural gas supply system to most of the facility has been inoperative. PG&E has since installed slip liners in the Navy's system for Building 606 in Parcel D and Building 813 in Parcel A. No other facilities at HPS are currently serviced by natural gas.

All distribution pipelines are operated at 15 pounds per square inch-gas (psig) nominal. Pressure regulators are installed at building service entrances to reduce the pressure to 4 to 18 inches water gauge. There is currently no cathodic protection of the gas distribution system (YEI 1988).

The gas distribution piping system has required very few repairs according to base maintenance personnel. The Phase 2 utility technical survey nondestructive testing performed in November 1987 at seven gas pipeline sites indicated generally minimal pipe corrosion, with numerous signs of breakdown of the coal tar coating. HPS gas submeters and regulators appeared to be in good condition in most cases. All aboveground valves were visually checked and most appeared to be in fair condition (YEI 1988).

Natural gas was used by only 27 of the 107 existing HPS facilities included in the YEI study. The primary use was space heating of offices, shops, and restaurants. Additional gas consumers included cooking equipment, water heaters, industrial furnaces and ovens, and a boiler supplying process steam for Dry Dock 4. Overall system loads were considerably less than original design conditions for the base (YEI 1988).

4.3.5.1 Parcel A

The gas distribution maps prepared by YEI indicate that gas service in Parcel A was provided to Buildings 322, 808, 813, 816, 901, 916, and 921. No other buildings or structures are apparently plumbed for gas service. The majority of the streets in the former residential areas of Parcel A are not equipped with gas distribution lines. Streets that have gas distribution lines include Crisp Avenue, Spear Avenue, Robinson Street, Galvez Avenue, Donahue Street, Innes Street, and Hudson Avenue (Tetra Tech 1994).

4.3.5.2 Parcel B

Natural gas service in Parcel B is limited to Buildings 109, 129, 130, 134, and 137 and to Dry Docks 5, 6, and 7. Gas piping to Building 109 originates from a 6-inch gas pipe running beneath Robinson Street in Parcel A. Gas supplies to the remainder of Parcel B originate from a 4-inch pipe that enters the parcel at the intersection of Fisher Avenue and Lockwood Street.

4.3.5.3 Parcel C

Natural gas service in Parcel C is supplied in Buildings 211, 214, 215, 217, 230, 231, 241, 251, 252, 253, 258, 271, 272, and 275 and to Dry Docks 2 and 3. Gas piping enters Parcel C at the corner of Fisher Avenue and Lockwood Street and at the corner of Fisher Avenue and Spear Avenue. Although an 8-inch infrastructure is installed in the western portion of this parcel, the maximum service provided to any point within this parcel is by 4-inch pipe.

4.3.5.4 Parcel D

Natural gas service in Parcel D is supplied to Buildings 264, 302, 307, 351, 366, 381, 401, 405, 408, 411, 414, and 709 and to Berths 15, 16, 18, 19, and 20. Gas piping enters Parcel D at the corner of Fisher Avenue and Spear Avenue, at the corner of "I" Street and Crisp Avenue, and on Spear Avenue adjacent to Building 401. Maximum service available to the western portion of Parcel D is through an 8-inch pipe. The eastern portion of this parcel is serviced through a 4-inch pipe.

4.3.5.5 Parcel E

Natural gas service to Parcel E is supplied to Buildings 521, 600, and 707. Subterranean infrastructure for numerous former delivery points also exists within the southern portion of Parcel E. Gas piping enters Parcel E from the 8-inch pipe service in Parcel D.

4.3.6 Saltwater Systems

Three separate saltwater systems serve HPS (see Figure 4-8) (YEI 1988): a low-pressure system serves portions of the waterfront and the base industrial area; an old (1940s) high-pressure system serves Dry Dock 4 and the North and South Piers; and a newer (1986) high-pressure system also serves Dry Dock 4 and the North and South Piers. These systems are used for fire protection and for cooling and flushing of ships' systems.

The low-pressure system was originally fed from pumps in six different buildings located throughout the lower elevation area of the base. All of these low-pressure pumps are now inoperative, with the exception of one unused pump in Building 204. The low-pressure saltwater system located west of Dry Dock 4 and the South Pier has been valved off and has been out of service for several years. The existence of several breaks in the system suggests that the saltwater system is in poor condition. Sections of the system with broken piping have been isolated from the remainder of the system (YEI 1988).

The old high-pressure system is pressurized by four electrically driven pumps, two pumps in each of the two buildings. All of these pumps are in good condition and operable. One pump in each building is equipped with a diesel-driven engine as a backup power supply. Extensive work was performed on these systems in 1986 to ensure fire-fighting capability to support Dry Dock 4 operational requirements (YEI 1988).

In addition to those saltwater systems, each of the dry docks is equipped with pumping systems to evacuate the dry docks. Triple A (the former Navy lessee) was first issued a permit to discharge waste under the NPDES program in 1977. Triple A discharged wastewater to the Bay as part of dry dock operations from 1977 until 1987, when it lost the lease on the Hunters Point facility. Dry Dock 4 is equipped with two pumping systems located in Buildings 236 and 308. Dry Dock 4 and the operation of these systems is now under Astoria Metals, a lessee to the Navy.

The newest high-pressure system was added in 1986 to improve pressure and flow capacities to serve large carriers in Dry Dock 4. This system is also pressurized by four electrically driven pumps, two pumps in each of the two buildings. Each pair of pumps is equipped with a diesel-driven generator for backup electrical power. The high-pressure saltwater systems are in good condition (YEI 1988).

Since 1991, the saltwater system at HPS has not been used for any purpose (Tetra Tech 1993d).

4.3.6.1 Parcel A

The saltwater system in Parcel A is limited to a 2.5-inch line connecting to the sanitary sewer collection station in Building 819.

4.3.6.2 Parcel B

During the utility inspection in 1987, YEI noted that the main portion of the saltwater network installed in Parcel B was inactive due to a broken main. No effort has since been made to repair this network. The only active portion of the saltwater network is the section along the north side of Dry Dock 3. This section serves five fire hydrants located in the area. This small network is supplied from the Parcel C saltwater network.

4.3.6.3 Parcel C

The saltwater network in Parcel C consists of both low-pressure and high-pressure systems. The low-pressure system serves 18 fire hydrants throughout the parcel and provides service to all of the docking berths. The low-pressure network also supplies saltwater to the north side of Dry Docks 3 and 4. The low-pressure network is pressurized by a pair of unused 1,000-gallon per minute (gpm) pumps located in Building 204 and a 1,000-gpm pump located in Building 203 (Dry Dock 4 area).
The high-pressure system is limited to the North Pier area. This system is pressurized by two 1,150-gpm pumps in Building 236 (Dry Dock 4 area) and two 2,000-gpm pumps in Building 203 (Dry Dock 4 area).

4.3.6.4 Parcel D

The saltwater network in Parcel D consists of both a low-pressure and a high-pressure system. The low-pressure system serves 20 fire hydrants throughout the parcel and provides service to all of the docking berths around the South Pier. The low-pressure network is connected with the low-pressure network in Parcel C. Additional pressurization is provided by a 500-gpm pump in Building 308 (Dry Dock 4 area).
The high-pressure system is limited to the South Pier area. This system is pressurized by two 1,150-gpm pumps in Building 308 (Dry Dock 4 area).

4.3.6.5 Parcel E

The saltwater network in Parcel E consists of a low-pressure system that serves 11 fire hydrants throughout the developed or formerly developed areas of the parcel. Service to the docking berths has been discontinued due to a broken main line in that area. The Parcel E network is connected with the low-pressure network in Parcel D. No additional pressurization is provided within Parcel E.

4.3.7 Potable Water System

Fresh water to HPS is supplied by the San Francisco Water Department through two water mains (see Figure 4-8). A 16-inch main along Crisp Avenue supplies the greater part of the fresh water needs of the shipyard, including the needs of naval ships berthed at the piers, wharves, or in dry dock. A smaller 8-inch main along Jerrold Avenue supplies the water needs of the former housing area and administrative buildings located in Parcel A. The two water distribution systems are connected together through at 14-inch pipe and balance valve assembly, presently closed at Galvez Avenue (YEI 1988).

The 16-inch water main runs parallel to Crisp Avenue and services the numerous buildings and yard facilities located adjacent to the street through a system of smaller, branching water lines. The water distribution system is a combined service system; that is, water for both fire protection and domestic use is supplied from this common 16-inch water main.

Much of the fresh water system piping is probably more than 50 years old and was installed when the shipyard was constructed. Sections of the piping have been replaced over the years due to corrosion, leaks, or major breaks. Some sections have been replaced with nonmetallic pipes, notably polyvinyl chloride (PVC). Some sections of the HPS freshwater system have been isolated due to recent pipe breaks. Nondestructive testing shows the majority of the piping to be in good condition, with some piping in the waterfront area in fair to poor condition due to external corrosion (YEI 1988).

Several computerized flow analyses have been performed on the HPS freshwater distribution systems. Field flow tests have also been performed. These analyses and flow tests show that the distribution system has insufficient water pressure for fire fighting requirements in the former housing area served by the Jerrold Avenue water main (YEI 1988).

Amendments to the Safe Drinking Water Act require all public drinking water systems to monitor and, if needed, control the concentrations of the lead and copper in the tap water they provide. In response to these regulations, HPS has implemented a lead and copper drinking water compliance program. The drinking water at HPS exceeded EPA's action level for lead during the monitoring program conducted in 1994 (Radian Corporation [Radian] 1994). As a result, in accordance with the Safe Drinking Water Act and requirements of the City of San Francisco, the Navy informed the tenants of the results of drinking water monitoring and suggested, as a precautionary measure, to obtain bottled drinking water. Monitoring of tap water at HPS will continue as required by the Safe Drinking Water Act (PRC 1997b)

4.3.7.1 Parcel A

Potable water connections are provided to all of the major buildings in Parcel A. The average water consumption calculated for Parcel A, assuming full operational status of the base, is about 72,000 gpd (YEI 1988).

4.3.7.2 Parcel B

Potable water connections are provided to most of the buildings in Parcel B, with the exception of Buildings 111, 112, 133, 135, 142, 146, and 157. Potable water service is also supplied to all dry docks and berths. Potable water supply lines enter the parcel at six locations along Galvez Avenue and Robinson Avenue. Three of these lines are 4 inches in diameter or less and serve only one or two buildings each. The remaining three lines (two 12-inch and one 6-inch) serve the remainder of Parcel B.

4.3.7.3 Parcel C

Buildings and structures in Parcel C that are served by the potable water system include Buildings 206, 211, 219, 228, 230, 231, 241, 251, 253, 270, 272, 275, 281, and 282, Dry Docks 2 and 3, and all docking berths. Service to the north side of Dry Dock 4 and the power plant (Building 203) is also provided from the potable water network in Parcel C. Potable water supply lines enter the parcel at six locations along Fisher Avenue and Lockwood Street. These supply lines range in size from 6 to 14 inches in diameter.

4.3.7.4 Parcel D

Buildings and structures in Parcel D that are served by the potable water system include Buildings 302, 307, 351A, 363, 370, 381, 400, 401, 402, 404, 405, 406, 407, 411, 413, 414, 418, 435, 439, 500, and 606 and all docking berths on the South Pier and Regunning Pier. Service to several buildings within Parcel E is also provided from the potable water network in Parcel D. Potable water supply lines enter the parcel at four locations. Two 8-inch supply lines enter the parcel across Spear Avenue and Moreell Street. A 10-inch supply line enters the parcel at the north end of Manseau Street and a 14-inch supply line enters Parcel D at Spear Avenue.

4.3.7.5 Parcel E

Buildings and structures in Parcel E that are served by the potable water system include Buildings 521, 600, 707, and 809. Service to these buildings originates from the potable water network in Parcel D. Supply line sizes range from 6 to 10 inches in diameter.

4.3.8 Telephone Line System

The telephone line system at HPS is mainly an underground system. The Navy has added some of its own lines in the past, but it is unknown if these lines are still in use or where they are located. Figure 4-8 shows the main cable system and connections to buildings at HPS.

4.3.9 Street Lighting System

The street lighting system is a combination of 2,300-V alternating current (AC)-series systems using constant current transformer regulators and multiple 120/240-V systems. Of the five 2,300-V series systems evaluated by YEI during its utility study in 1988, only one was functional. Some systems had been taken out of service and converted to multiple-type when primary wiring was upgraded to 12,470-V feed. It was YEI's opinion that the existing street lighting system could be made functional with some repair. No changes have been made to this system after the 1988 study.

4.4 TRANSPORTATION RESOURCES

This section presents the regional highway access, local street system, and air traffic for HPS.

4.4.1 Regional Highway Access

Regional land access to and from HPS is obtained by Interstate 280 (I-280) and U.S. 101 (see Figure 4-9). I-280 serves as a connector for the San Francisco Peninsula communities between San Jose and San Francisco. This route originates at the Route 280/680/101 interchange in San Jose and proceeds northerly through three counties (Santa Clara, San Mateo, and San Francisco), terminating at 4th and King Streets in San Francisco.

U.S. 101 is a major north-south route for local and inter-regional traffic. U.S. 101 through San Francisco, is also heavily used by commuters traveling between the peninsula communities and San Francisco. Because U.S. 101 provides a direct connection to the Bay Bridge through Interstate 80, and connects to

the Golden Gate Bridge through the Van Ness Avenue/Lombard Street corridor, many commuters with origins and destinations in the East Bay and Marin County also use it.

From the San Francisco/San Mateo County boundary to just south of Golden Gate Avenue, U.S. 101 is a six- to eight-lane freeway. Average annual daily and peak hour traffic volume on U.S. 101 just south of the Third Street interchange (near the county line) is 180,000 vehicles per day and 13,000 vehicles per hour, respectively (Tetra Tech 1993a). HPS can be accessed from the Third Street exit southwest of HPS. Access to HPS from I-280 can be made only by exiting at Mariposa Street or at Alemany Boulevard south of HPS. Access to HPS from U.S. 101 can be made by exiting at Cesar Chavez (formerly Army Street).

4.4.2 Local Street System

Four major arterial roads connect the regional highways to Hunters Point (see Figure 4-10).

Third Street: This street is a north-south arterial extending from Market Street on the north to U.S. 101 (at Bayshore Boulevard) on the south. This street parallels U.S. 101 and I-280 in the site vicinity and provides an alternative path for vehicles traveling in the north-south direction.

Evans Avenue: This arterial begins at Cesar Chavez Boulevard, becomes Hunters Point Boulevard at the Jennings Street intersection, and then becomes Innes Avenue near the HPS entrance.

Cesar Chavez (formerly Army Street): This roadway is an east-west arterial connecting regional freeway ramps to and from U.S. 101 and I-280 to Evans Avenue, Hunters Point Boulevard, and Innes Avenue, which leads directly into HPS.

Crisp Avenue: This avenue is a residential roadway connecting Palou Avenue with Spear Avenue and is also a secondary access road leading to HPS. Under current conditions, this access point is gated and is used almost exclusively for emergencies.

4.4.3 Circulation and Parking

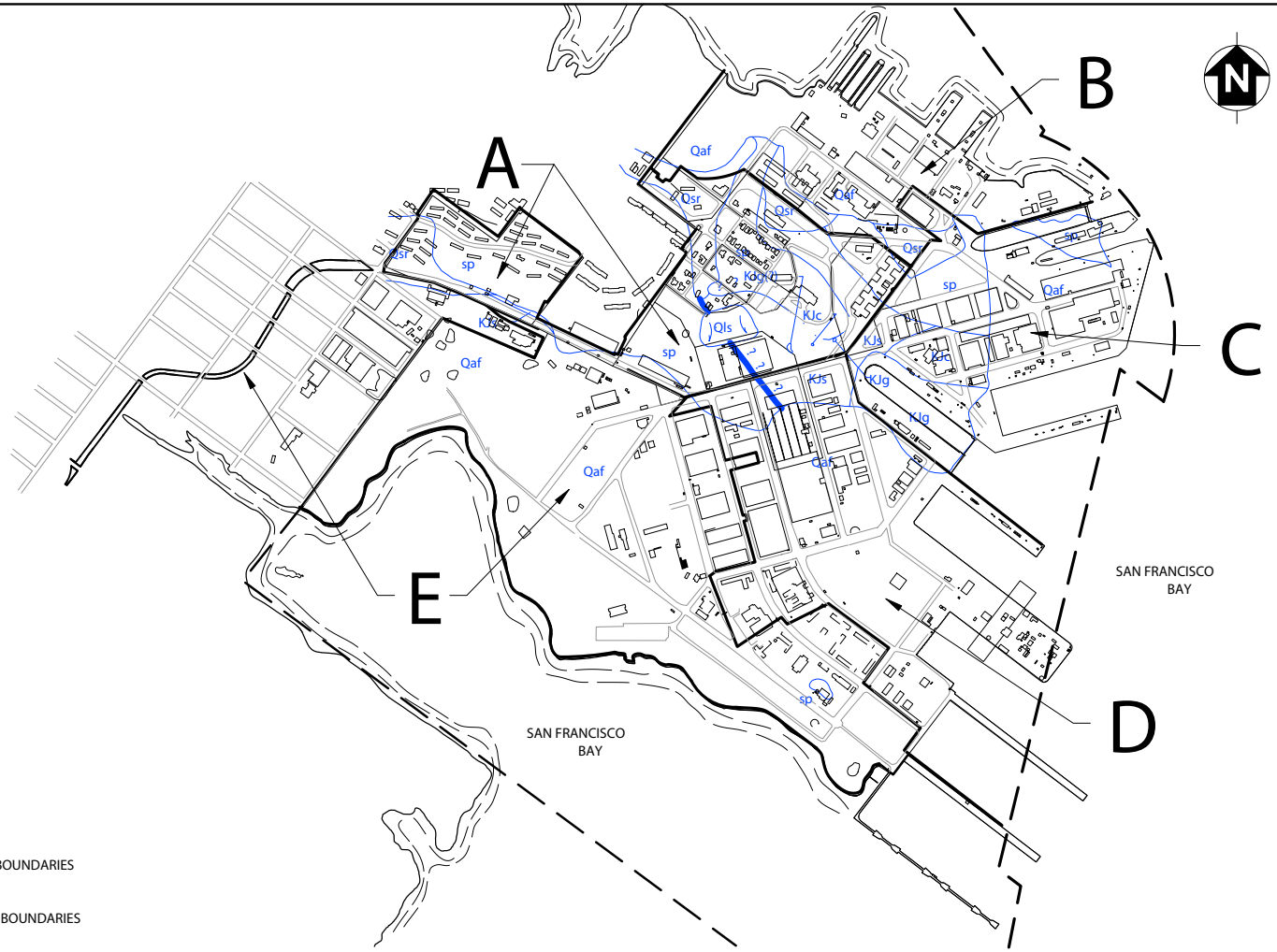
All Navy and non-Navy traffic on and off the facility is routed through the main gate at Innes Avenue and Donahue Street. The main circulation corridor through the facility consists of Donahue Street, Galvez Avenue, Warrington Street, Fisher Avenue, Spear Avenue, and Crisp Avenue (see Figures 4-11 and 4-12). These streets form the boundary between Parcel A and the surrounding parcels and represent the only route to Parcels A through E.

Parking in Parcel A is limited to about 130 spaces near Buildings 901 and 921. Limited parking is also available near most of the buildings in this parcel. Most of the parking in Parcel B is limited to the area near Buildings 103 and 117. Parking in Parcel C is primarily available in a large parking area near the intersection of Fisher Avenue and Lockwood Street. Parcel D is primarily limited to a large parking lot at the intersection of Mahan and Hussey Streets. Parcel E parking is primarily limited to the parking lot adjacent to Building 600. Limited parking is also available in all parcels near most of the buildings.

4.4.4 Air Traffic

HPS lies within the flight path of commercial aircraft arriving or departing San Francisco International Airport by runways 19L and 19R. Flights departing from these runways cross near HPS (see Figure 4-13). Flight frequency ranges from seven flights per hour during the day (7:00 a.m. to 7:00 p.m.) to two flights per hour during the night (10:00 p.m. to 7:00 a.m.) (CCSFPD 1992).

8/24/98 VEC DN O:\HUNTER\EBS\FIG4-1.DWG



LEGEND

PARCEL BOUNDARIES

FACILITY BOUNDARIES

GEOLOGIC DESCRIPTIONS

SURFICIAL DEPOSITS (QUATERNARY PERIOD)

Qaf

Qls LANDSLIDE DEBRIS ZONE (AND DIRECTION OF MOVEMENT)
Qaf ARTIFICIAL FILL
Qsr SLOPE DEBRIS AND RAVINE FILL

FRANCISCAN COMPLEX BEDROCK (CRETACEOUS/JURASSIC PERIOD)

KJs SANDSTONE AND SHALE BEDROCK
KJc CHERT BEDROCK
KJg GREENSTONE (ALTERED) VOLCANIC ROCK
sp SERPENTINE BEDROCK

FAULT

750 0 750' 1500

SCALE: 1" = 1500'

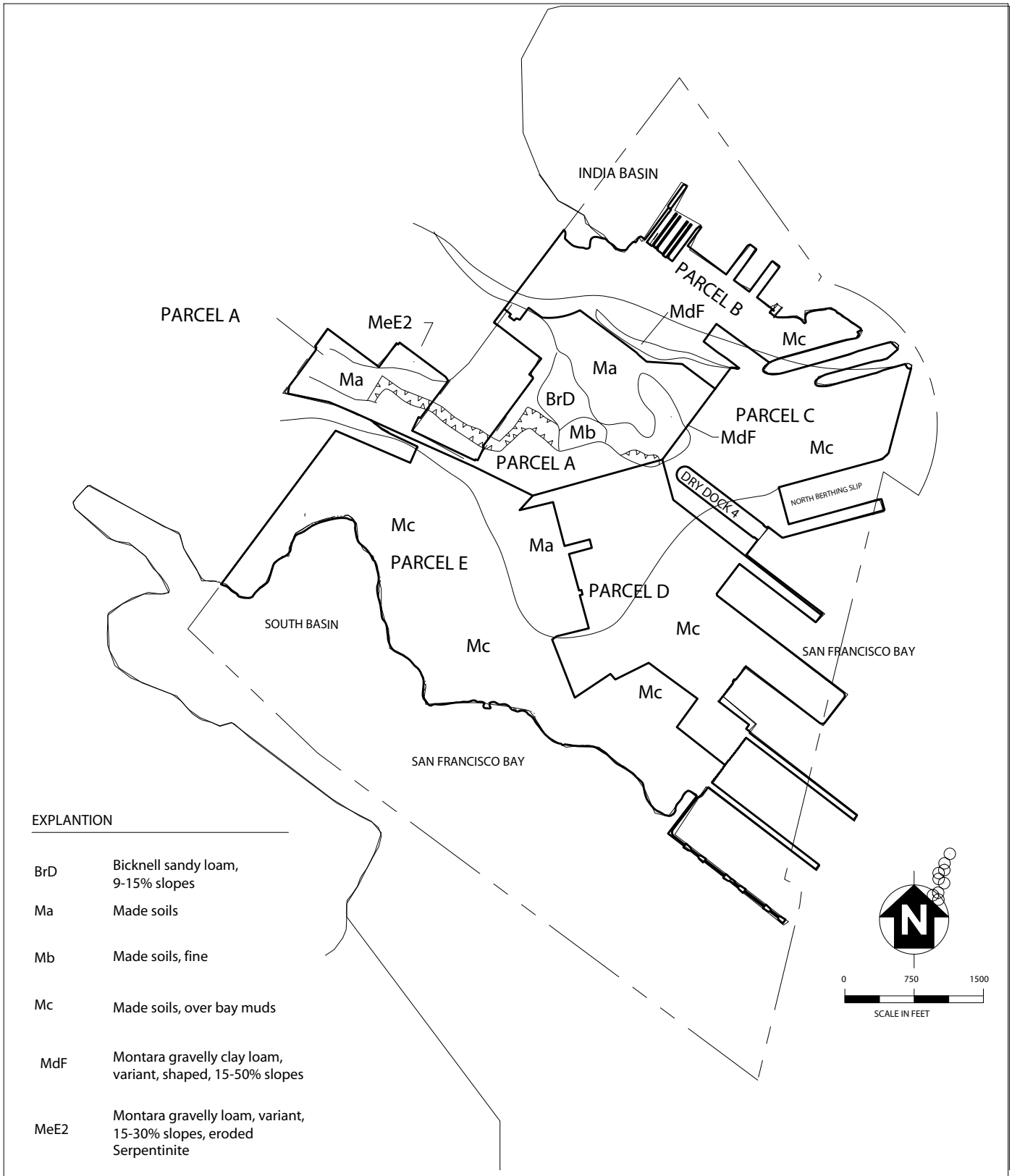
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD SAN FRANCISCO, CALIFORNIA

FIGURE 4-1
GEOLOGIC MAP
ENVIRONMENTAL BASELINE SURVEY



EXPLANTION

BrD	Bicknell sandy loam, 9-15% slopes
Ma	Made soils
Mb	Made soils, fine
Mc	Made soils, over bay muds
MdF	Montara gravelly clay loam, variant, shaped, 15-50% slopes
MeE2	Montara gravelly loam, variant, 15-30% slopes, eroded Serpentinite

Rock escarpment and soil boundary - Points are inward from outer perimeter of rock escarpment boundary

Soil Boundary

Parcel Boundary

Source: U.S. Soil Conservation Service, 1960

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

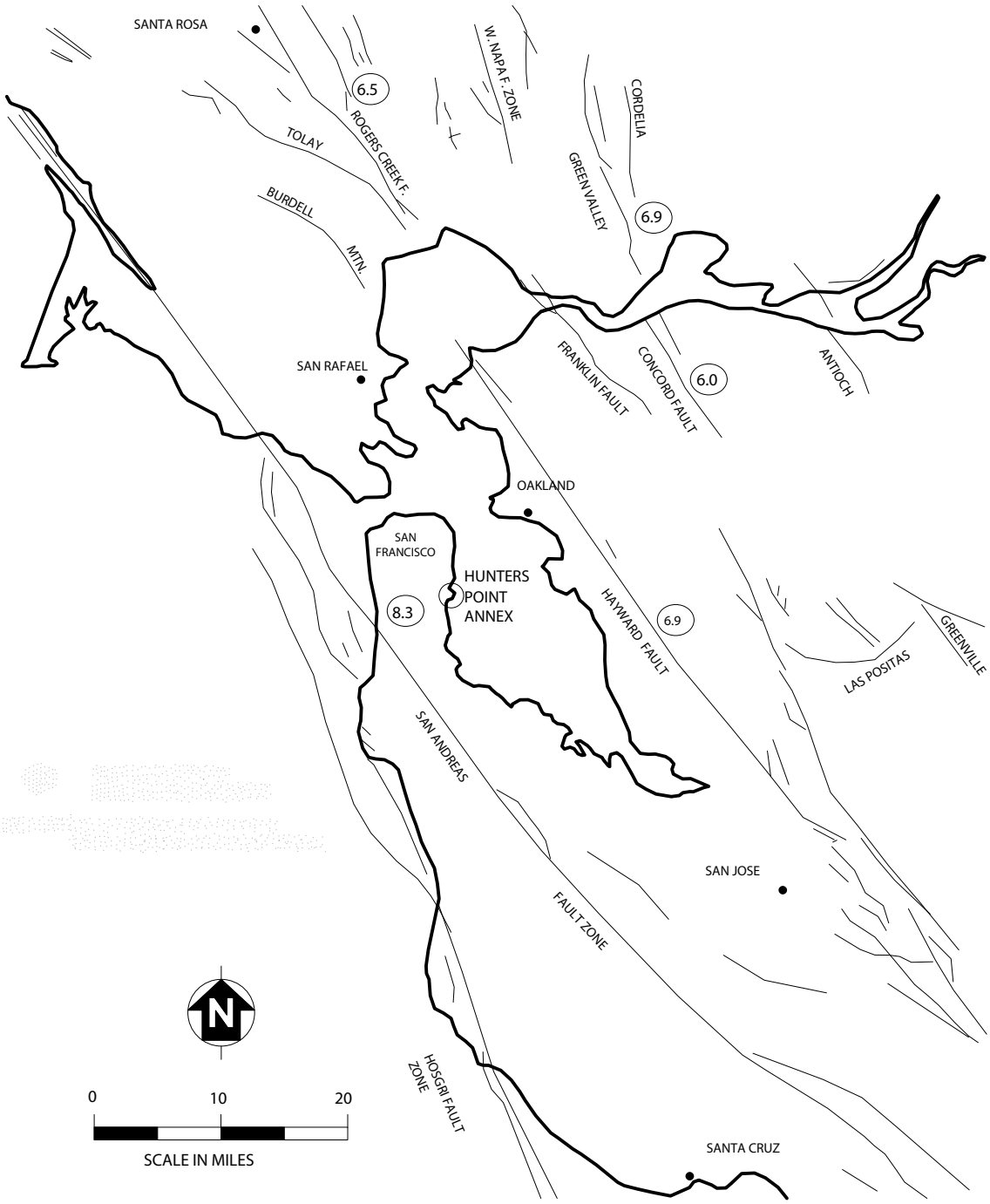
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-2
SOIL CLASSIFICATION MAP
ENVIRONMENTAL BASELINE SURVEY

3/27/98 DDJ DN O:\HUNTER\EBS\FIG4-2.DWG



8.3 Maximum Credible Earthquake Magnitude

Source: Neotectonic Framework of Central Coastal California, 1974.

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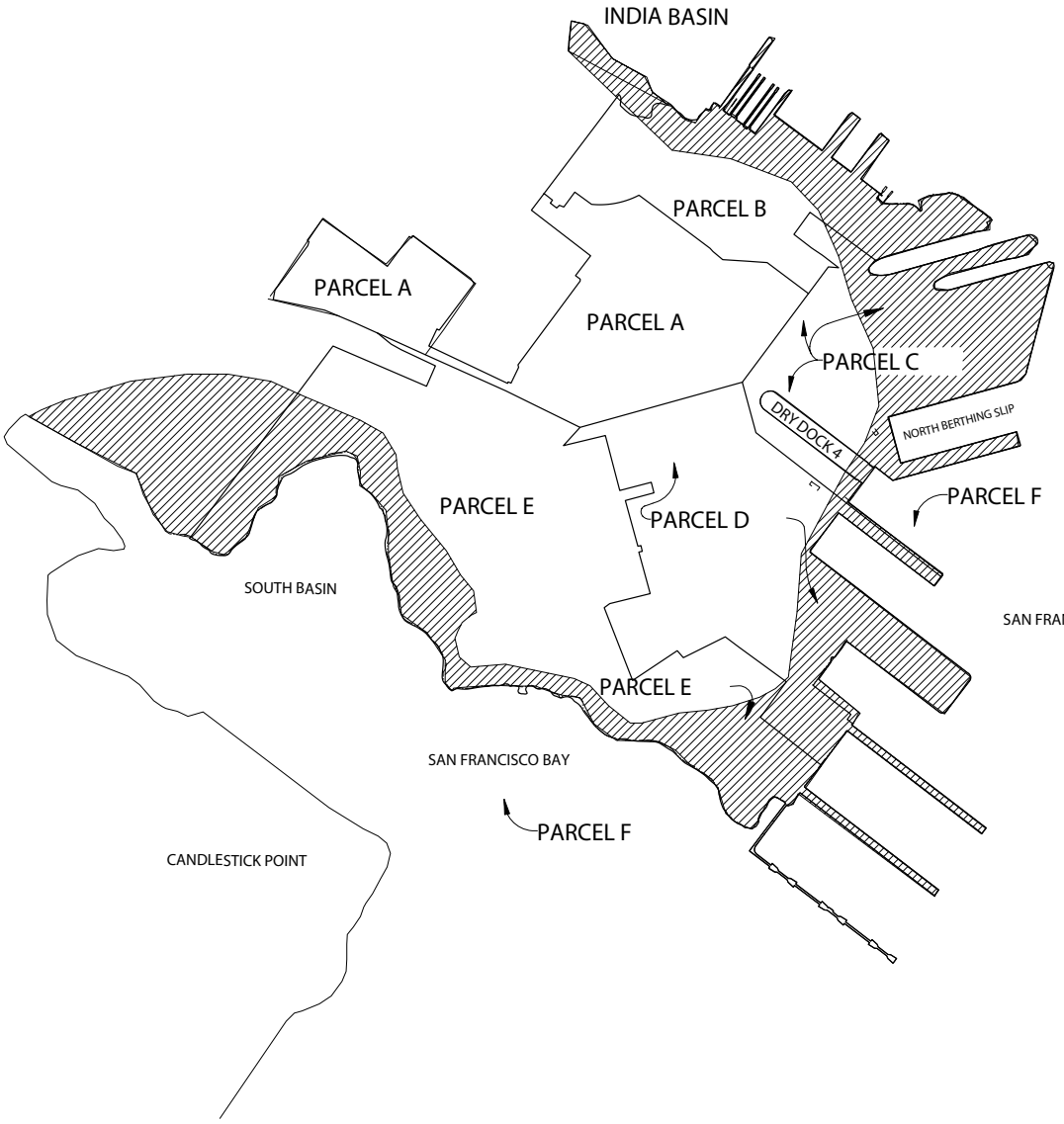
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-3
REGIONAL FAULT MAP
ENVIRONMENTAL BASELINE SURVEY

8-24-98 VEC DN O:\HUNTER\EBS\FIG4-3.DWG



0 1000 2000

SCALE IN FEET

Area of potential flooding

Source: Westec, 1984

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

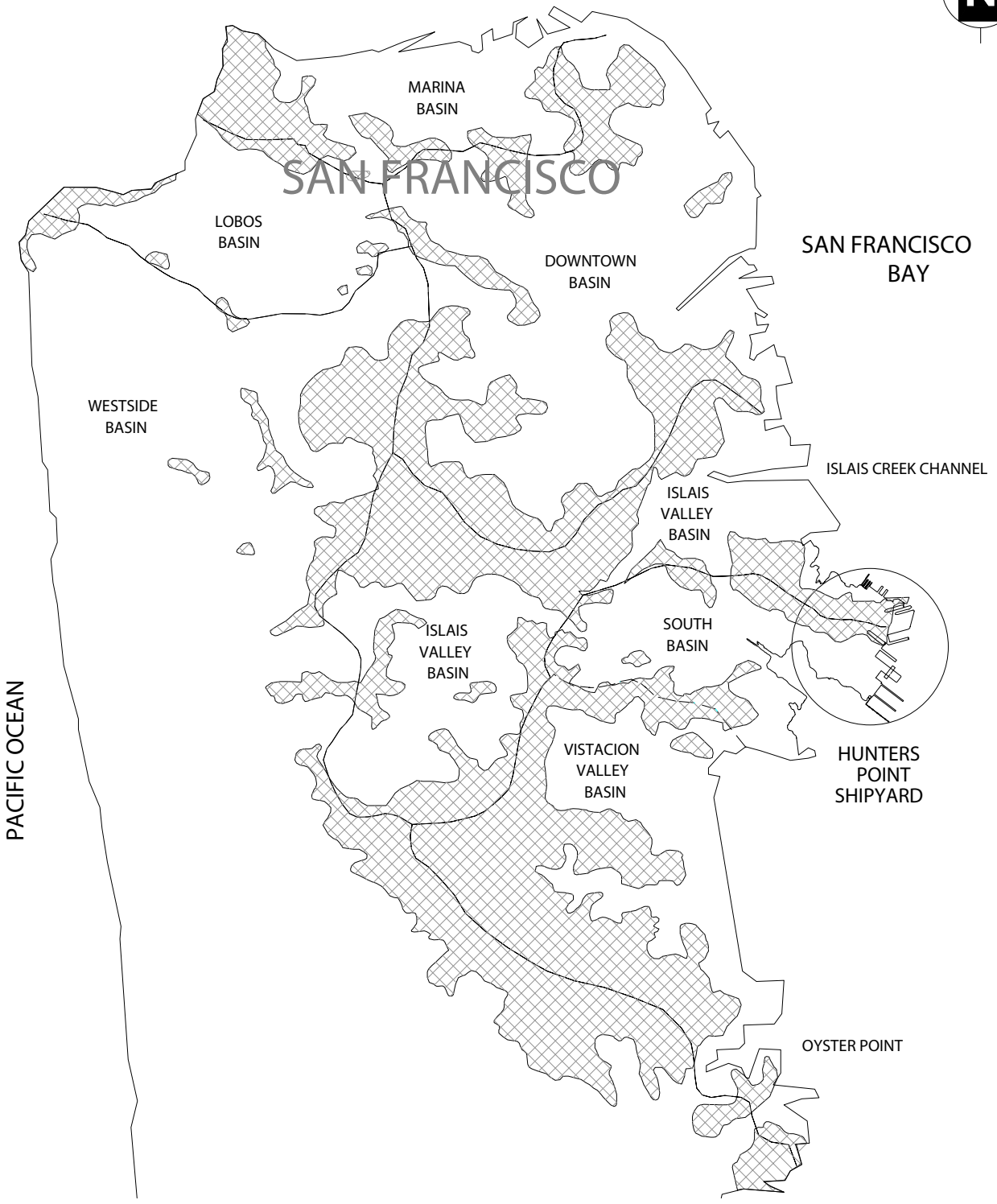
HUNTERS POINT SHIPYARD SAN FRANCISCO, CALIFORNIA

FIGURE 4-4

FLOOD ZONE MAP

ENVIRONMENTAL BASELINE SURVEY

8/24/98 VEC DN O:\HUNTER\EBS\FIG4-4.DWG



LEGEND:

SHORELINE

BEDROCK SURFACE

BASIN BOUNDARY

NOT TO SCALE

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

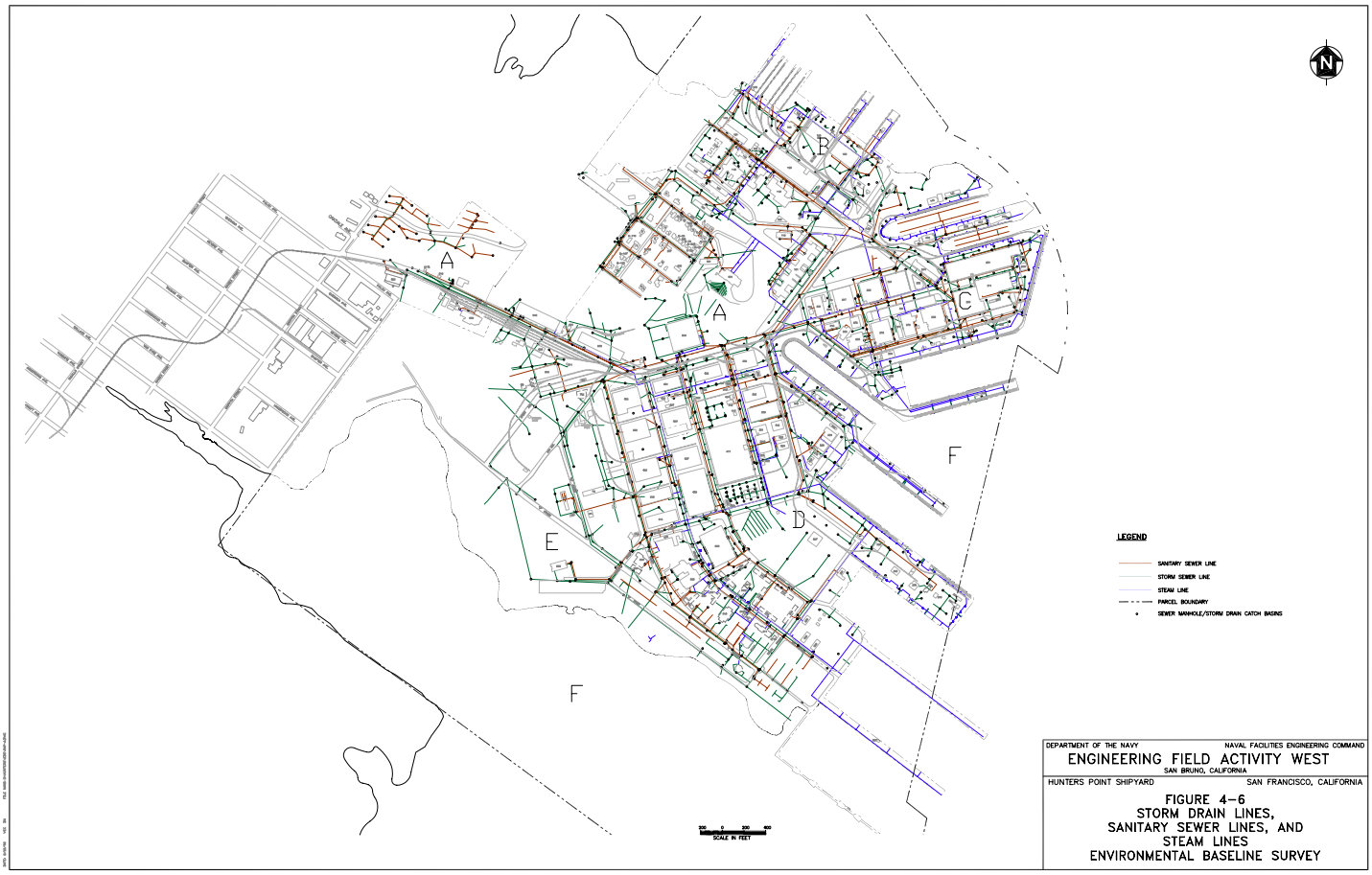
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-5
GROUNDWATER BASINS
ENVIRONMENTAL BASELINE SURVEY

3/19/98 DN: DDJ: O:\HUNTER\EBS\HYDROBAS.DWG



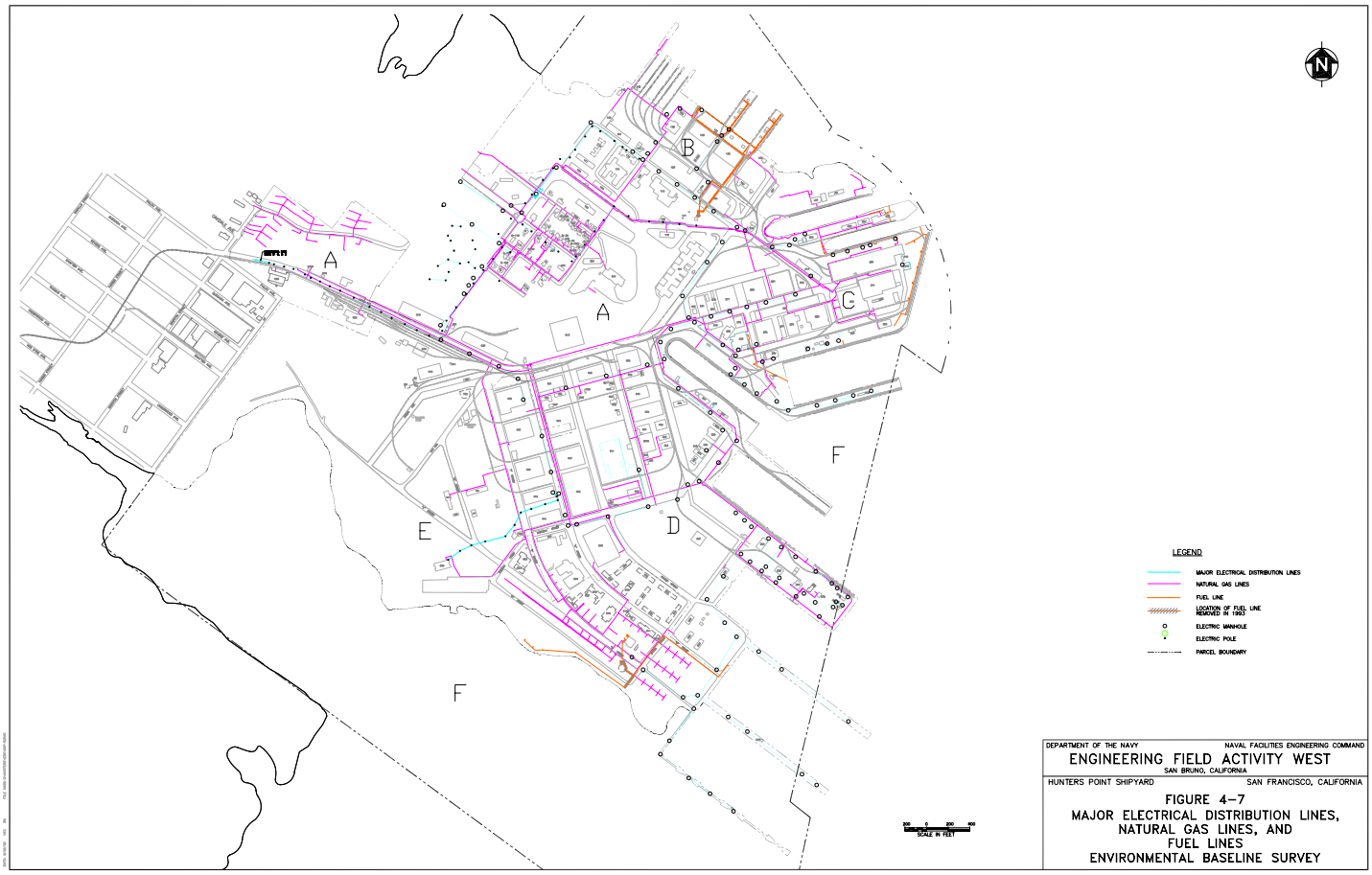
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-6
STORM DRAIN LINES,
SANITARY SEWER LINES, AND
STEAM LINES
ENVIRONMENTAL BASELINE SURVEY



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

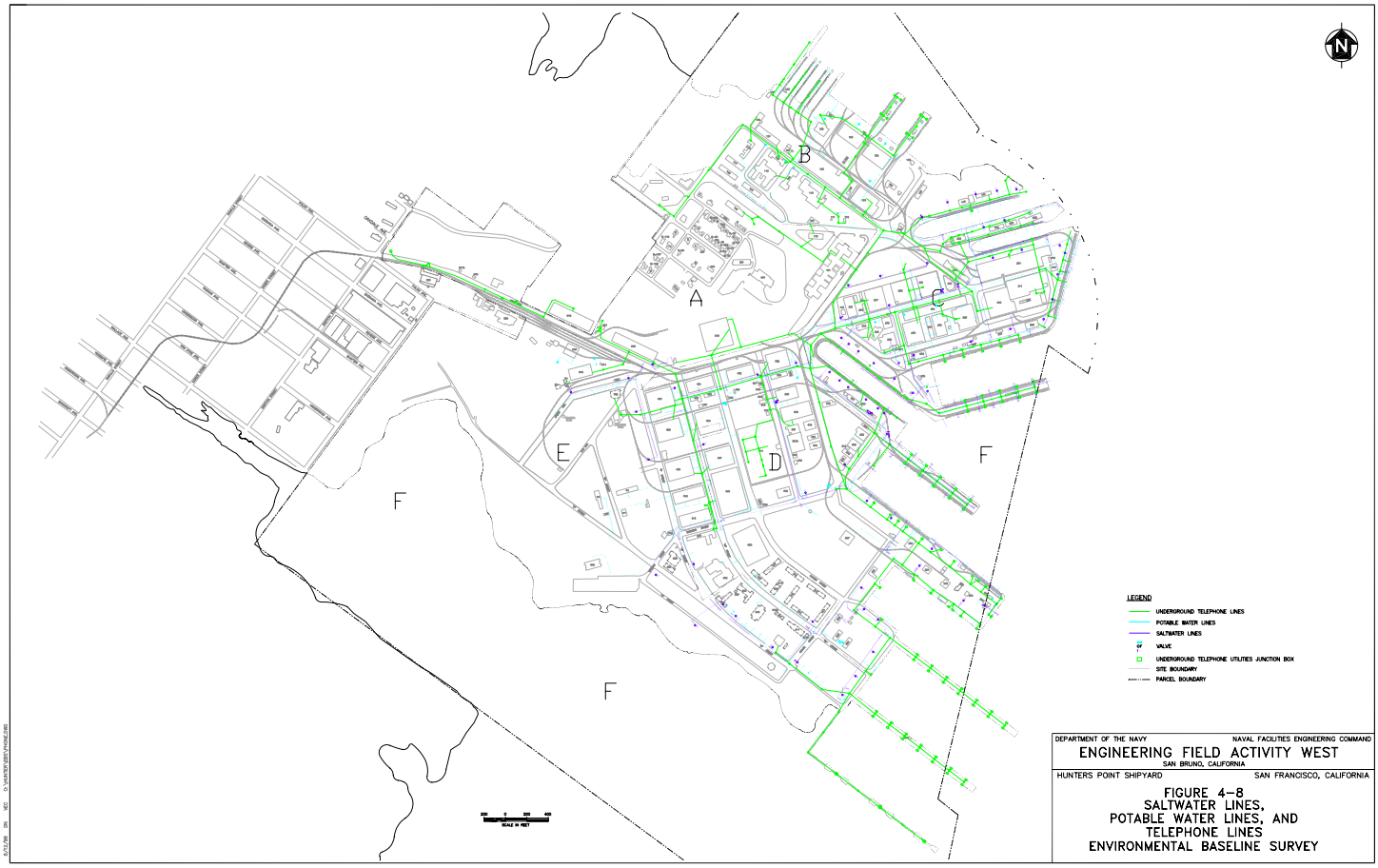
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-7

MAJOR ELECTRICAL DISTRIBUTION LINES, NATURAL GAS LINES, AND FUEL LINES ENVIRONMENTAL BASELINE SURVEY

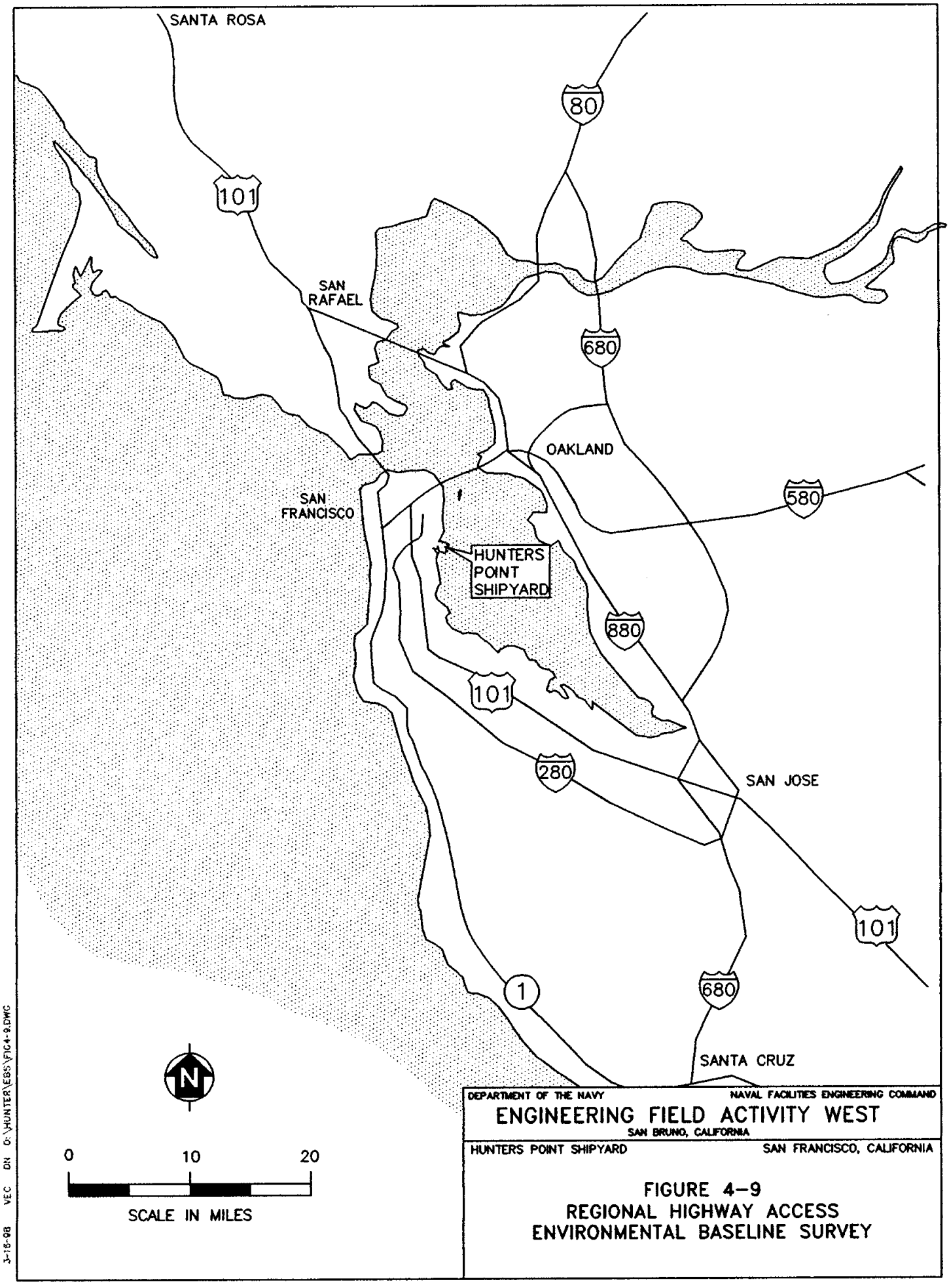


DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST
SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-8
SALTWATER LINES,
POTABLE WATER LINES, AND
TELEPHONE LINES
ENVIRONMENTAL BASELINE SURVEY



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

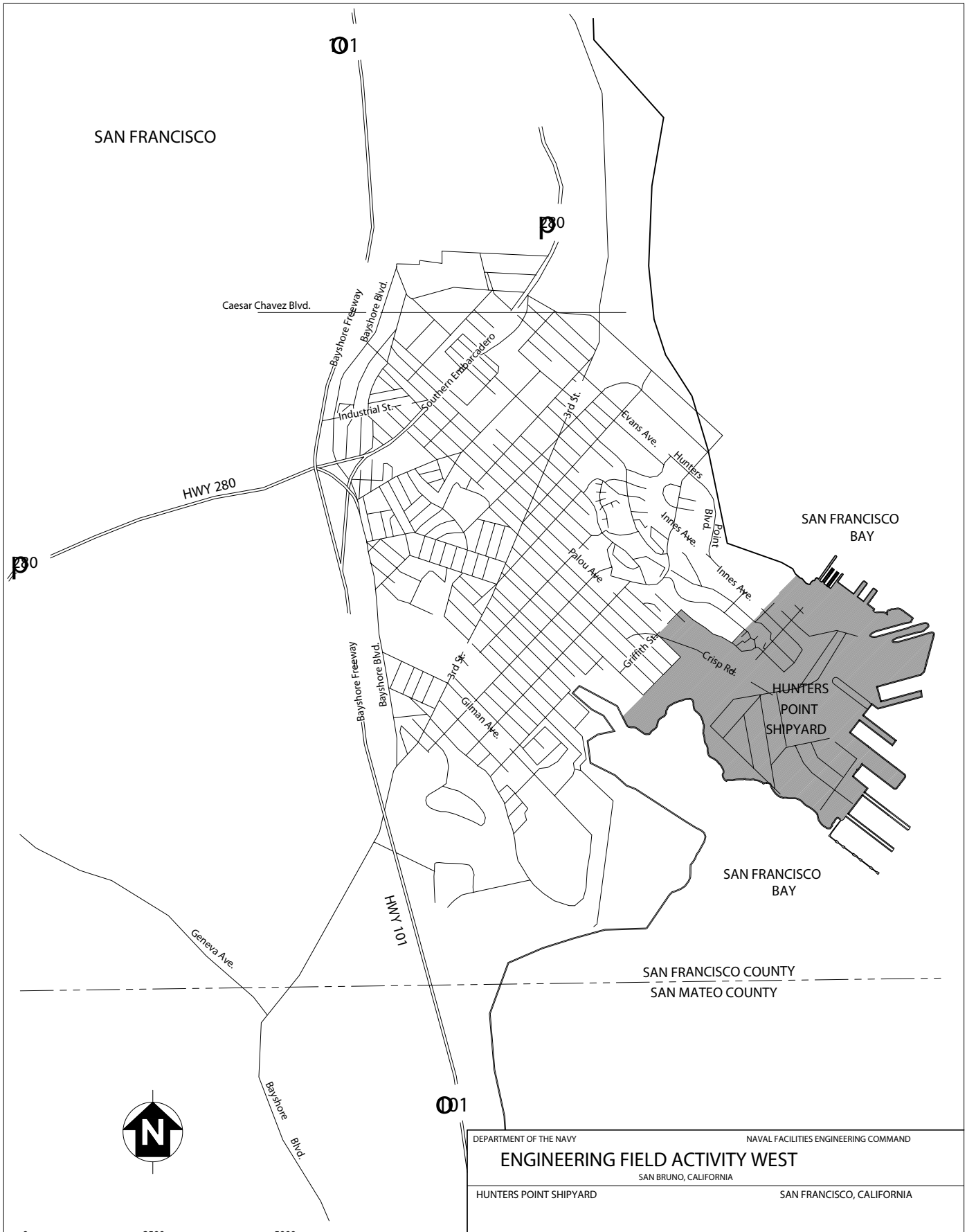
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-9
REGIONAL HIGHWAY ACCESS
ENVIRONMENTAL BASELINE SURVEY

J-16-98 VEC GN G:\HUNTERS\EBS\FIG4-9.DWG



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

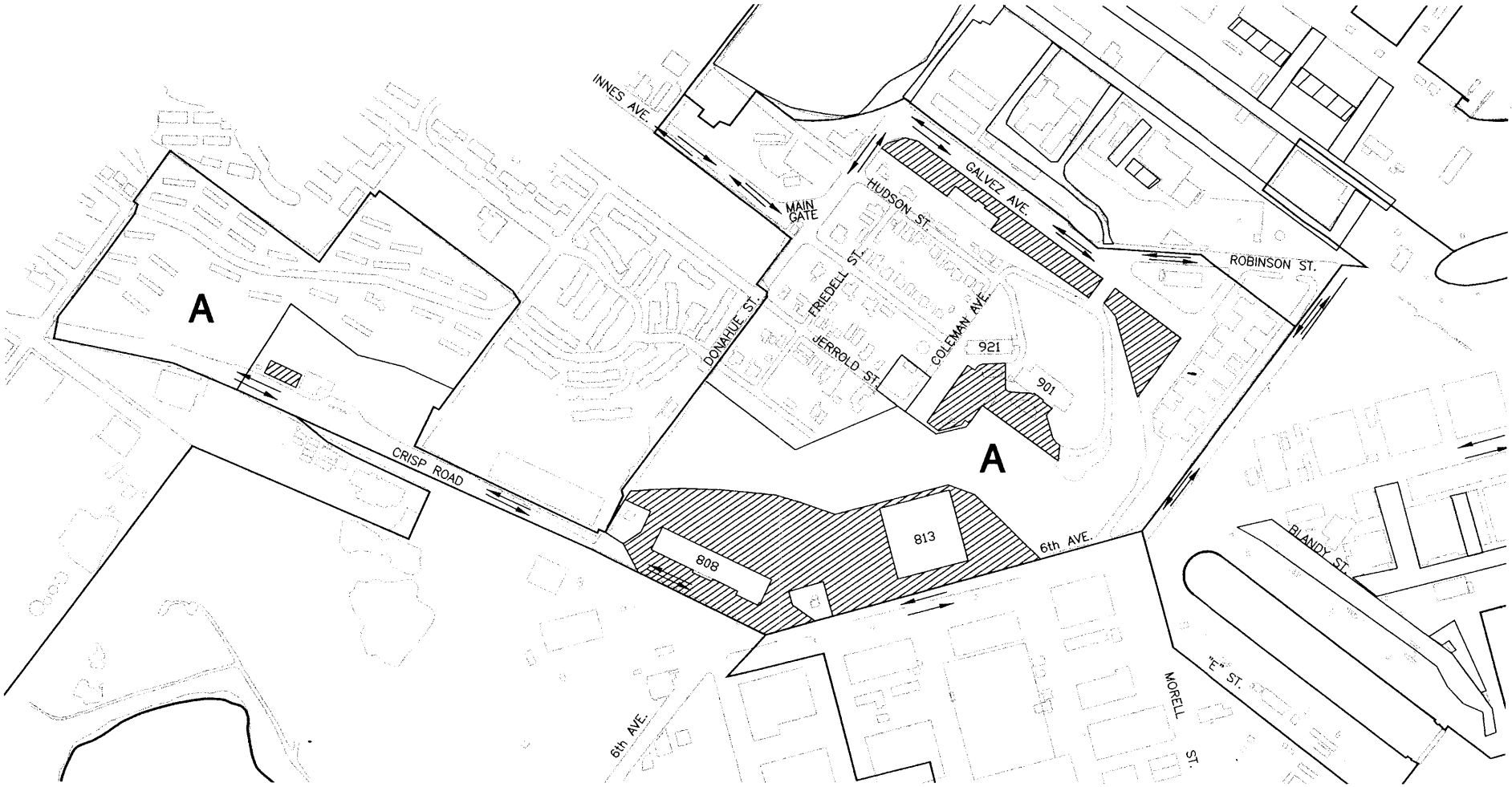
SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-10

LOCAL STREET SYSTEM
ENVIRONMENTAL BASELINE SURVEY

3/19/98 DDJ DN O:\HUNTERS\EBS\FIG-4-10.DWG



EXPLANATION:

PRIMARY ACCESS/CIRCULATION ROADS

PRIMARY PARKING AREAS

N

0 2000 4000

SCALE IN FEET

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

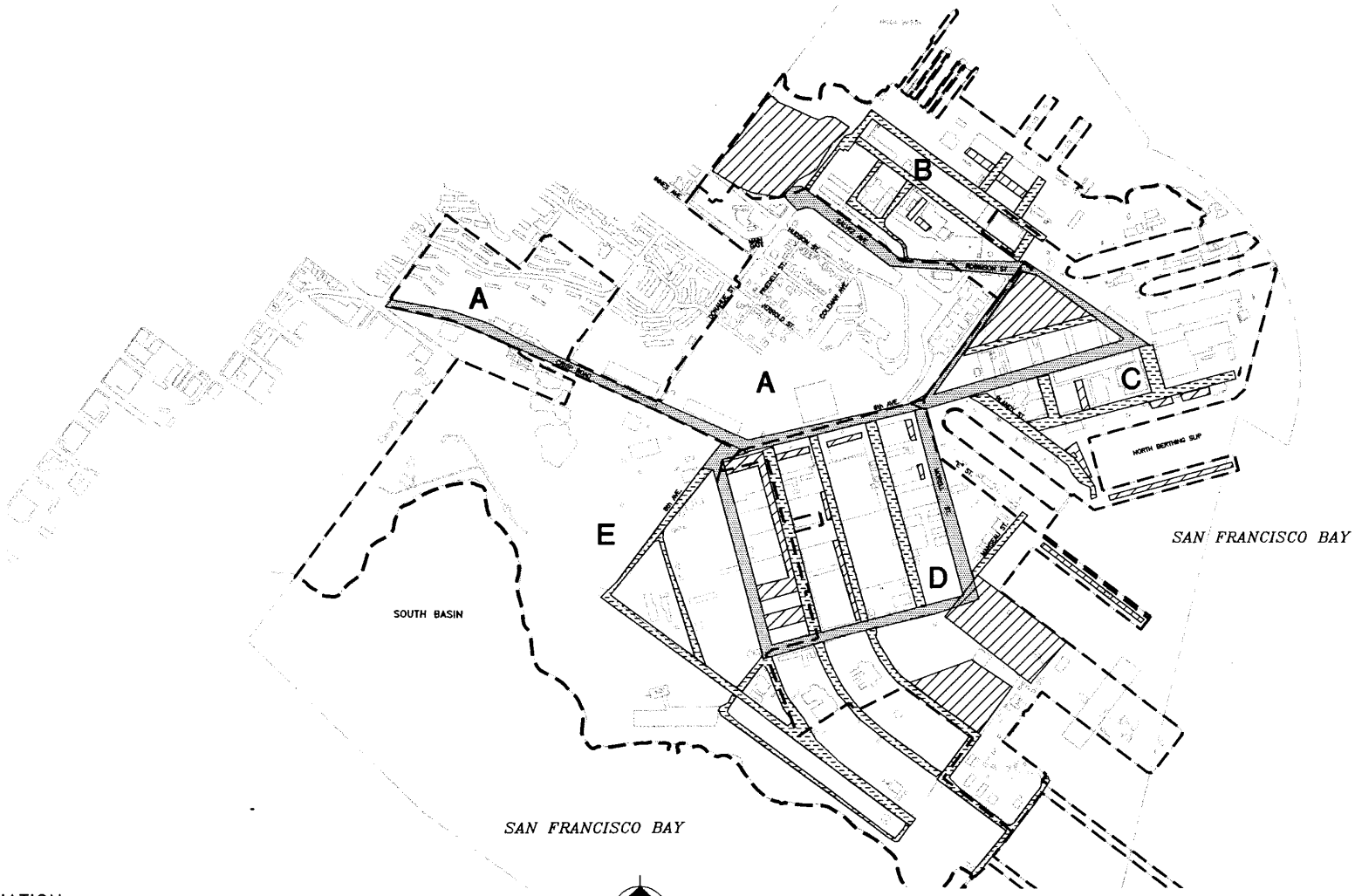
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-11
PARCEL A
CIRCULATION AND PARKING
ENVIRONMENTAL BASELINE SURVEY

3/26/96 I DN O:\HUNTER\EBS\7104-11.DWG



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

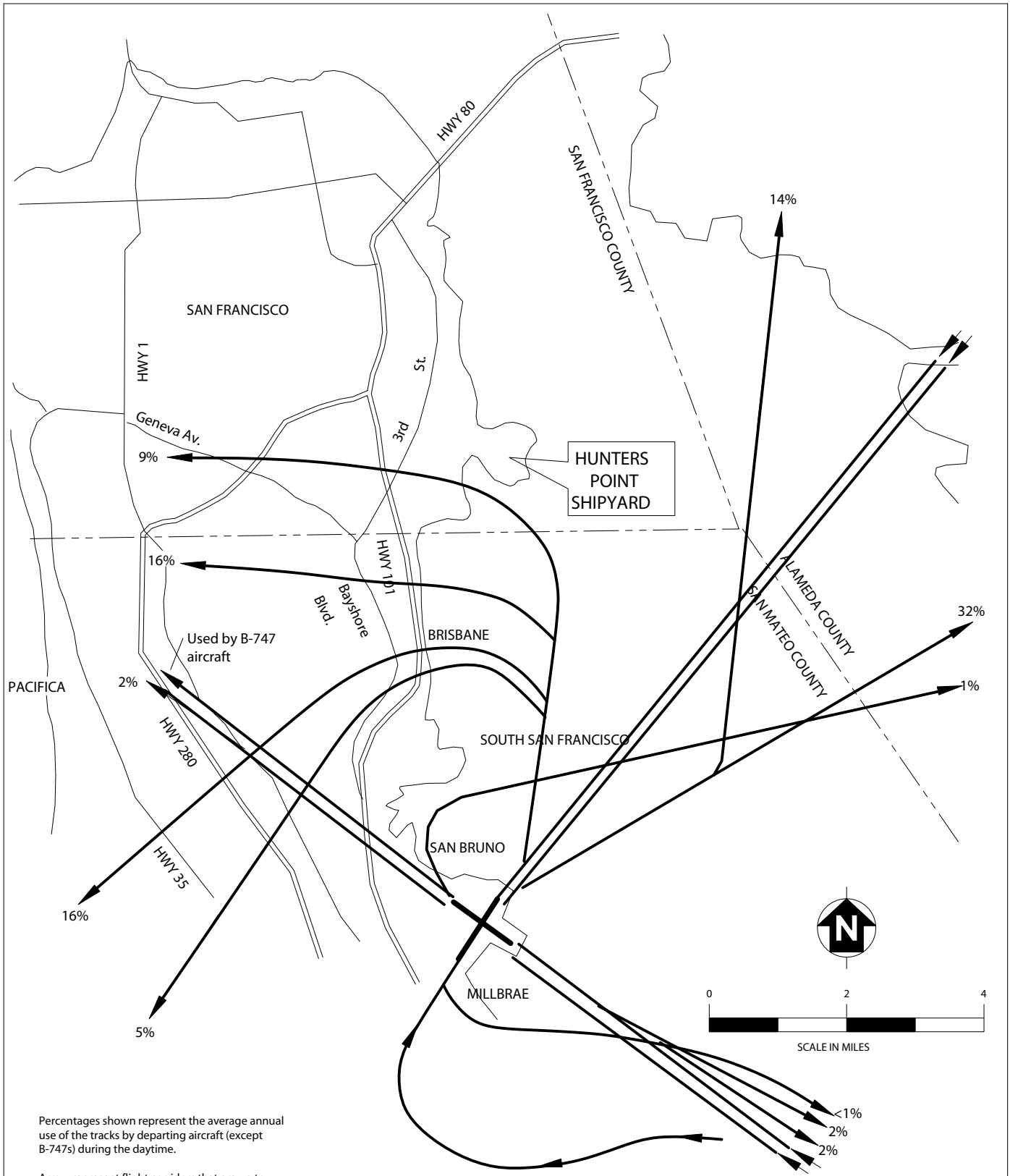
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-12
PARCELS B, C, D, AND E
CIRCULATION AND PARKING
ENVIRONMENTAL BASELINE SURVEY

3/19/98 DN C:\HUNTERS\EBS\FIG4-12.DWG



Percentages shown represent the average annual use of the tracks by departing aircraft (except B-747s) during the daytime.

Arrow represent flight corridors that are up to several miles wide. Actual aircraft flight patterns are more widely dispersed than shown here.

Source: City and County of San Francisco, Department of Planning
1992 San Francisco International Airport Master Plan.
Environmental Impact Report.

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 4-13
COMMERCIAL AIR TRAFFIC PATTERNS
ENVIRONMENTAL BASELINE SURVEY

8/20/98 VEC DN O:\HUNTER\EBS\FIG4-13.DWG

TABLE 4-1

GEOLOGIC AND HYDROGEOLOGIC UNITS AT HPS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Geologic Age	Geologic Units	Hydrogeologic Units
Holocene	Artificial Fill Undifferentiated Upper Sand Deposits	A-aquifer
Holocene	Bay Mud Deposits	Aquitard
Holocene to Pleistocene[a]	Undifferentiated Sedimentary Deposits	B-aquifer
Jurassic to Cretaceous	Franciscan Complex Bedrock	Bedrock water-bearing zone

Note:

HPS Hunters Point Shipyard

a Holocene to Pleistocene are Quarternary Age

TABLE 4-2

CLIMATOLOGICAL DATA IN VICINITY OF HPS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Month	Mean Temperature	Mean Number Days with Fog	Relative Humidity (%) 10 LST	Relative Humidity (%) 16 LST	Mean Precipitation (inches)	Mean Wind Speed (mph)	Prevailing Wind Direction
January	48.2	3.6	78	66	4.65	7.2	WNW
February	51.6	2.7	75	64	3.23	8.7	WNW
March	52.8	0.4	70	63	2.64	10.5	WNW
April	54.8	0.1	65	59	1.53	12.2	WNW
May	57.8	0.1	63	59	0.32	13.4	W
June	60.8	0.0	63	59	0.11	13.9	W
July	62.2	0.0	65	59	0.03	13.6	NW
August	63.0	0.2	67	61	0.05	12.7	NW
September	63.9	0.7	66	59	0.19	11.1	NW
October	60.6	1.4	68	59	1.06	9.4	WNW
November	54.5	2.2	72	63	2.35	7.5	WNW
December	49.2	3.3	77	67	3.55	7.0	WNW
Annual	**56.6**	**14.8**	**69**	**62**	**19.71**	**10.6**	**WNW**

Notes:

LST	Local standard time
mph	Miles per hour
NW	Northwest
Temp	Temperature
W	West
WNW	West northwest
a	1/4 mile or less of visibility

Source:

Western Regional Climate Center, Desert Research Institute, Climatic Brief for San Francisco International Airport, June 1992-1993.

TABLE 4-3

HYDROGEOLOGY AT HPS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Aquifer or Aquitard	Groundwater Conditions	Unit Thickness (feet)	Hydraulic Conductivity[a] (ft/day)	Transmissivity[a] (ft^2/day)	Storativity[b]	Porosity[c] (%)	TDS (mg/L)	Salinity (mg/L)	Groundwater Quality
A-aquifer	Porous media; unconfined, semiconfined	0.5 to 60	0.003 to 140	0.05 to 12,000	0.0006 to 0.07	28 to 40	600 to 34,000	400 to 29,000	Generally not suitable for drinking[d]
B-aquifer	Porous media; confined	Unknown	0.5 to 15	4.7 to 150	Unknown	35 to 41	450 to 2,500	370 to 2,300	Generally not suitable for drinking[d]
Bay Mud Deposits	Aquitard	5 to 60	Unknown	Unknown	Unknown	61 to 63	NA	NA	NA
Bedrock aquifer	Fractured rock	Unknown; assumed limited	Unknown; assumed limited	Unknown; assumed limited	Unknown; assumed limited	Unknown	<500[e] 1,200 to 3,000[f]	250 to 4,300	Partially suitable for drinking [g]

Notes:

ft^2/day	Square feet per day
mg/L	Milligrams per liter
NA	Not applicable
TDS	Total dissolved solids

a The A-aquifer values were based on slug test results using the Bouwer and Rice method. The B-aquifer values were based on slug test results using the Cooper method.

b Based on pumping test results.

c Porosity percentages were obtained from 22 A-aquifer samples, two B-aquifer samples, and 2 Bay Mud Deposit samples.

d The groundwater in this aquifer is generally not drinkable, since groundwater in most monitoring wells has TDS concentrations greater than 500 mg/L (the Safe Drinking Water Act Maximum Contaminant Level).

e Data from Parcel A bedrock.

f Data from Parcel B bedrock.

g Groundwater in the bedrock aquifer at Parcel A has TDS concentrations of less than 500 mg/L and is of drinking water quality. Groundwater in the bedrock aquifer at Parcel B has TDS concentrations of greater than 500 mg/L and is not suitable for drinking.

TABLE 4-4

CALIFORNIA SPECIAL ANIMALS AND THREATENED AND ENDANGERED SPECIES ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Species	Common Name	Status at HPS	Designation
California Special Animals			
Ocnorhynchus tshawytscha	Chinook salmon	Observed	SSC (spring run) and SE and FT (winter run)
Spirinchus thaleichtys	Longfin smelt	Observed	FC1
Gavia immer	Common loon	Observed	SSC
Pelecanus erythrorhychos	American white pelican	May be present	SSC
Pelecanus occidentalis Californicus	California brown pelican	Observed	SE and FE
Phalacrocorax auritus	Double crested cormorant	Observed	SSC
Bucephala islandica	Barrow's goldeneye	Observed	SSC
Charadrius alexandrinus	Snowy plover	May be present	SSC, FC2, SBS, and MC
Numenius madagascariensis	Long-billed curlew	Observed	SSC
Larus Californicus	California gull	Observed	SSC
Sterna caspia	Caspian tern	May be present	SSC
Sterna elegans	Elegant tern	May be present	SSC
Circus cyaneus	Northern harrier	May be present	SSC and AB
Pandion haliaetus	Osprey	Observed	SSC
Falco peregrinus	Peregrine falcon	Observed	SE and FS
Asio flammeus	Short-eared owl	May be present	SSC, SBS, and AB
Athene cunicularia	Burrowing owl	Observed	SSC
Eremophila alpestris	Horned lark	May be present	SSC and FC2
Lanius ludovicianus	Loggerhead shrike	Observed	CSC and FC2
Geothlypis trichas	Common yellowthroat	May be present	SSC, SBS, and FC2
Melospiza melodia	Song sparrow	May be present	SSC and FC2

TABLE 4-4 (Continued)

CALIFORNIA SPECIAL ANIMALS AND THREATENED AND ENDANGERED SPECIES ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Species	Common Name	Status at HPS	Designation
California Threatened and Endangered Species			
Ocnorhynchus tshawytscha	Chinook salmon	Observed	SSC (spring run) and SE and FT (winter run)
Spirinchus thaleichthys	Longfin smelt	Observed	FC1
Falco peregrinus	Peregrine falcon	Observed	SE and FE
Eremophila alpestris	Horned lark	May be present	SSC and FC2
Lanius ludovicianus	Loggerhead shrike	Observed	SSC and FC2
Pelecanus occidentalis Californicus	California brown pelican	May be present	SE and FE
Geothylypis trichas	Common yellowthroat	May be present	SSC, FC2, and SBS

Notes:

HPS Hunters Point Shipyard

Designation Codes:

AB Species listed on the Audubon Blue List of birds designated by the National Audubon Society as experiencing a population decline.

FC1 Category 1 candidate for listing by the U.S. Fish and Wildlife Service (sufficient biological information is available to support a proposal to list taxa as endangered or threatened).

FC2 Category 2 candidate for listing by the U.S. Fish and Wildlife Service (existing information indicates taxa may warrant listing, but substantial biological information necessary to support a proposed rule is lacking).

FE Listed as threatened by the federal government.

FT Listed as endangered by the federal government.

MC Species is a nongame migratory bird of special federal management concern because of documented or apparent population declines, small or restricted populations, and dependence on restricted or vulnerable habitats.

SBS Sensitive bird species is a nongame migratory bird special federal management concern because of documented or apparent population declines, small or restricted populations, and dependence on restricted or vulnerable habitats.

SE Listed as endangered by the State of California

SSC California Department of Fish and Game Species of Special Concern.

TABLE 4-5

MUSSEL WATCH PROGRAM RESULTS SUMMARY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Station Number:	**307.9**		**308.0**		**309.0**	
Station Name:	**Islais Channel**		**Hunters Point**		**San Mateo Bridge**	
Sample Date:	**01/21/87**		**12/07/82**		**02/09/90**	
	Weight (mg/kg)					
Trace Metals[a]	**Dry**	**Wet**	**Dry**	**Wet**	**Dry**	**Wet**
Aluminum	304.25	45.64	183.17	23.81	1,016.01	112.78
Cadmium	4.21	0.63	8.77	1.14	11.42	1.27
Chromium	2.82	0.42	1.17	0.15	3.69	0.41
Copper	8.29	1.24	8.97	1.17	13.41	1.44
Lead	3.27	0.49	1.57	0.2	2.49	0.28
Manganese	18.41	2.76	10.03	1.3	24.51	2.72
Mercury	0.714	0.107	0.334	0.043	0.508	0.056
Silver	3.551	0.533	0.38	0.049	0.893	0.099
Zinc	139.02	20.85	178.07	23.15	236.17	26.215
Organics[b,c]	**Weight (µg/kg)**					
Total chlordane	36.1	5.1	28.5	3.48	Not tested	Not tested
Chlorpyrifos	6.2	0.9	ND	ND	Not tested	Not tested
Total DDT	106.3	14.9	113.5	13.85	Not tested	Not tested
Dieldrin	45	6.3	62	7.56	Not tested	Not tested
Total endosulfan	2.3	0.3	1.5	0.18	Not tested	Not tested
alpha-BHC	1.9	0.3	0.7	0.09	Not tested	Not tested
gamma-BHC	2.2	0.3	0.6	0.07	Not tested	Not tested
Heptachlor epoxide	ND	ND	9.9	0.11	Not tested	Not tested
Hexachlorobenzene	ND	ND	0.5	0.06	Not tested	Not tested
Total PCBs	440	61.6	340	41.48	Not tested	Not tested
Ronnel	NA	NA	ND	ND	Not tested	Not tested

Notes:

BHC Hexachlorocyclohexane
DDT Dichlorodiphenyltrichloroethane
mg/kg Milligrams per kilogram
NA Not analyzed

Notes (Continued):

TABLE 4-5 (Continued)

MUSSEL WATCH PROGRAM RESULTS SUMMARY
HUNTERS POINT SHIPYARD

ND	Not detected
PCB	Polychlorinated biphenyl
µg/kg	Micrograms per kilogram

a Trace metals not analyzed: arsenic, nickel, selenium, and titanium.

b Organics not detected were: aldrin, chlorbenside, chlordene, dacthal, diazinon, endrin, ethylparathion, delta-BHC, heptachlor, methoxychlor, methylparathion, tetradifon, and toxaphene.

c Organic not analyzed were: pentachlorophenol, phenol, tetrachlorophenol, and tributyltin.

Source:

California State Mussel Watch. Ten Year Data Summary 1977 through 1987 and Preliminary 1989 through 1990 Results. State Water Resources Control Board.

CHAPTER 5

FINDINGS FOR BASE PROPERTY

This chapter presents an overview and summary of the findings of the basewide EBS at HPS, specific to on-base property at HPS. The information presented in this chapter was derived from IRP reports, the 1997 tenant survey, the 1995 VSIs, review and assessment of environmental programs, interviews, aerial photograph analysis, and title document review.

The subparcel summaries are presented in Section 5.1 and complete printouts of the database output for each subparcel are contained in Volume II of this report. Section 5.2 discusses the 1997 tenant survey. Sections 5.3 and 5.4 present the results of the environmental program review; Section 5.3 discusses the compliance programs at HPS, while Section 5.4 summarizes the environmental assessment and IRP at HPS. A brief description and status of all IRP sites at HPS are detailed in Appendix G of this report. Section 5.5 summarizes the findings of the interviews conducted for the EBS; supporting information regarding the interviews is detailed in Appendix B of this report. Section 5.6 summarizes the findings of the review of available aerial photographs of HPS, which are presented in detail in Appendix C of this report. Finally, Section 5.7 summarizes the findings of the title document review. Supporting documentation for the title document review is contained in Appendix D of this report.

The following tables are located at the end of this chapter: Table 5-1 summarizes the IRP sites at HPS; Table 5-2A lists the Navy's annual hazardous waste generation rates from 1942 through 1974, and parcel hazardous waste quantities based on those rates; Table 5-2B lists Navy tenant hazardous material parcel quantities; Table 5-2C lists the hazardous materials above reportable quantities; Table 5-3 lists buildings with damaged, friable, and accessible asbestos; Table 5-4A lists existing and former high voltage electrical equipment; Table 5-4B lists low voltage electrical equipment; Table 5-5 inventories USTs; Table 5-6 inventories ASTs; Table 5-7 lists IR sites by parcel; and Table 5-8 summarizes reviewed documents.

5.1 SUBPARCEL SUMMARIES

The 1995 VSI and 1997 tenant survey provided current data regarding the status of hazardous materials, hazardous waste storage, waste disposal and accumulation sites, and visibly discernible spill locations. This section provides a brief synopsis of the information obtained from the IRP reports, 1997 tenant survey, 1995 VSIs, and current environmental programs at HPS. These VSI summaries may be used as a

reference or starting point for obtaining information regarding a specific subparcel. The information presented in this section provides general information about the conditions in a subparcel and in the buildings within a particular subparcel. Additional information may be found in Section 5.4, "Environmental Assessment/Installation Restoration Program," which summarizes documents developed during the PA and SI phases of the IRP, as well as in the HPS EBS database.

The HPS EBS database provides extensive information regarding current and past practices and conditions at HPS. The database information is presented according to the San Francisco reuse subparcels designation, cross-referenced to buildings and, if applicable, to the IR/SI areas. Information displayed for each subparcel includes the following:

- Utilities: sanitary sewers, storm sewers, potable water lines, steam lines, fuel lines, gas lines, electric lines, and access vaults
- Railways
- Roads
- Buildings: structural features, size, general condition, and current and past uses
- Hazardous materials: current and past use and accumulation
- Hazardous waste: current and past generation and accumulation and disposal
- Presence of ACM
- General visual indicators: waste piles, stained or discolored soil, sinks, pavement, floors, graded areas, pits, and ponds or lagoons
- Presence of pesticides, lead-containing materials, or medical/biological materials
- Presence or potential presence of PCBs
- USTs
- ASTs
- Oil-water separators

The subparcel summaries in the following sections are organized by large IRP parcel (Parcels A through E), then by reuse subparcel within each parcel. Some reuse subparcels overlap the boundaries of two

parcels; this occurrence is stated in the reuse subparcel description for that particular subparcel unit. Each reuse subparcel is cross-referenced to buildings and IR/SI sites within that subparcel. Again, the reuse subparcel may not contain the entire IR/SI site within its boundary, or may contain portions of multiple IR/SI sites (see Figure 5-1 and associated overlays in Chapter 1). A VSI of Parcel F, the submerged portion of HPS, was not performed. Figure 5-1 presents the subparcels and IR/SI site boundaries. Table 1-1 provides a cross-reference of the subparcels and IR/SI sites. In addition, Table 5-1 summarizes the IRP sites and cross-references them to the reuse subparcels.

The reuse subparcels were designated as land-use subparcels by the CCSFPD for long-range planning purposes. It is expected that the subparcel borders, and perhaps the subparcel concept, may change with time as reuse and redevelopment progress. The subparcels are classified as "N," "S," or "H" subparcels, signifying the north, south, or hill areas of HPS, respectively. The N subparcels are mainly industrial and shoreline areas. The S subparcels include heavily industrialized areas, shoreline areas, and a landfill area that is largely designated as open space. The H subparcels consist mainly of the residential hill area of HPS. Each area includes an area of open space designated by the suffix "OS" (N-OS, S-OS, and H-OS).

The subparcel summaries include information related to the subjects in the database. The subparcel summaries were updated for currently occupied buildings in 1997. Therefore, the data presented are limited only to observations at the time of the survey. Current physical and chemical conditions in any subparcel may differ from what is presented in this section. The observations focus on environmental concerns, but may also provide general information regarding the buildings and land within each reuse subparcel.

The interiors of the following buildings were not inspected during the 1995 VSIs: Buildings 281 and 352; formerly used defense site (FUDS) Buildings 815, 820, 830, and 831; and the Parcel A residences. During the 1995 VSIs, the tenant of Building 281 (Skellington Productions) denied access to the interior of this building. Building 281 is currently unoccupied. Building 352 could not be inspected due to the ongoing asbestos abatement program. Inspection of this building was attempted a few times, but the abatement was ongoing during all visits. Building 352 is also currently unoccupied. It was unclear if the FUDS buildings would be considered part of the basewide EBS since they have been transferred to new owners in 1970, but some information is provided on the FUDS in this EBS. The Parcel A residences were not considered to contain anything other than small quantities of household-related hazardous substances and building ACM.

5.1.1 Parcel A

Parcel A contains 16 subparcel units, four of which overlap (p) other parcels, as shown on Figure 1-3 and in Table 1-1. The SI and IR sites in Parcel A are shown and described on Figures 5-1 and 5-2, in Table 5-1, and in Appendix G of this report.

5.1.1.1 Subparcel H-48

This subparcel contains roads, railways, foundations for several demolished buildings, and unoccupied Buildings 816, 817, 817A, and 818. This subparcel also contains site SI-41, which consists of Buildings 816 and 818, the asphalt parking lot between the two buildings, and the surrounding area. Subparcel H-48 is physically separated from the remainder of HPS by Crisp Avenue and land previously owned by the Navy that is now transferred to and owned by others. Building 816 was the NRDL High Voltage Accelerator/Laboratory and housed a Van de Graaf unit. A compressed gas cylinder rack was observed on the second floor of the building, the only visible evidence that hazardous materials were ever contained in this building. Building 817A was a sentry house and contained no visible evidence of hazardous materials usage. Building 818 was the HPS Chlorination Plant and was used for water chlorination; chlorine was stored in the rear of the building. Remnants of a pumping system were observed in a fenced area behind Building 818.

Soil at SI-41 was investigated during the Parcel A SI; results are documented in the Parcel A SI report (PRC 1993b) and are summarized in Appendix G of this report. As documented in the Parcel A ROD (PRC 1995h), remedial actions are not required in Subparcel H-48.

5.1.1.2 Subparcel H-49

This subparcel is a residential area bounded by Donahue Street, Friedell Street, Jerrold Avenue, and Kirkwood Avenue. The area is unoccupied and contains several former residences, including Buildings L, M, B-100, and D-107. No SI or IR sites are present in this subparcel. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement in Parcel A is already complete and is documented in the Parcel A asbestos remediation report prepared by Environmental Chemical Corporation (ECC) (ECC 1995). Asbestos abatement activities were conducted at Building L in 1995 (see Table 5-3).

5.1.1.3 Subparcel H-50

This subparcel is a residential area bounded by Innes Street, Donahue Street, Friedell Street, and Jerrold Avenue. The area is unoccupied and contains several former residences, including Buildings C, E, and R-118. Building E is currently proposed for lease to the SFRA. No SI or IR sites are present in this subparcel. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement program in Parcel A is complete and is documented in the Parcel A asbestos remediation report prepared by ECC (ECC 1995). Asbestos abatement activities were conducted at Building R-118 in 1995 (see Table 5-3).

5.1.1.4 Subparcel H-51

Subparcel H-51 is bounded by Innes Street, Donahue Street, Friedell Street, and Hudson Avenue. This subparcel contains several former residences; the Sentry House at the HPS main gate (Building 158); a former bank formerly used as the HPS caretaker staff offices (Building 915); and Building 322, the HPS security guard and pass office. Building 915 is currently proposed for lease to the SFRA.

Other than household items, no hazardous materials are stored in this subparcel. No SI or IR sites are present in this subparcel. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement program in Parcel A is complete and is documented in the Parcel A asbestos remediation report prepared by ECC (1995).

5.1.1.5 Subparcel H-52

This subparcel is a residential area bounded by open space (H-OS) and by Friedell Street, Kirkwood Avenue, and Jerrold Avenue. The area is unoccupied and contains several former residences, including Buildings A, R, and S. No SI or IR sites are present in this subparcel. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement program in Parcel A is documented in the Parcel A asbestos remediation report prepared by ECC (1995). Asbestos abatement activities were conducted at Buildings R and S in 1995 (see Table 5-3).

5.1.1.6 Subparcel H-53

This subparcel is a residential area bounded by Innes Street, Coleman Street, Friedell Street, and Jerrold Avenue. The area is unoccupied and contains several former residences, including Buildings B, N, O,

and R-95. This subparcel also contains demolished Building 906, a water tank, IR site IR-59 Jerrold Avenue Investigation (JAI) (IR-59 JAI), SI site SI-43, and one transformer. Piles of soil apparently generated during the RI work were observed in this subparcel in 1996. Petroleum odors were detected from these soil piles. SI-43 consists of a former gardener's shed (Building 906) and the surrounding area was investigated due to the presence of pesticides and fertilizer. IR-59 JAI consists of a former residential lot investigated due to the suspected presence of pesticides and sandblast waste. A 106,000-gallon water tank is located at the corner of Coleman Street and Innes Street. The tank is in good condition but is currently not in use. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement program in Parcel A is documented in the Parcel A asbestos remediation report prepared by ECC (ECC 1995). Asbestos abatement activities were conducted at Buildings N, O, and R-95 in 1995 (see Table 5-3).

Soil at SI-43 was investigated during the Parcel A SI; results are documented in the Parcel A SI report (PRC 1993b). Soil at IR-59 JAI was investigated during the Parcel A RI; results are documented in the Parcel A RI report (PRC 1995f). SI and RI results are also summarized in Appendix G of this report. As documented in the Parcel A ROD (PRC 1995h), remedial actions are not required in Subparcel H-53.

5.1.1.7 Subparcel H-54

This subparcel is a residential area bounded by Innes Street, Hudson Avenue, Friedell Street, and Coleman Street. The area is unoccupied and contains several former residences, including Buildings G, J, R-33, R-36, R-36A, R-39, R-45, R-66A, R-76, R-77, R-78, R-97, T, U, V, W, X, Y, and Z. No SI or IR sites are present in this subparcel. Several residences throughout Parcel A were labeled as containing ACM; the asbestos abatement program in Parcel A is documented in the Parcel A asbestos remediation report prepared by ECC (1995). Asbestos abatement activities were conducted at many buildings in Subparcel H-54 in 1995 (see Table 5-3).

5.1.1.8 Subparcel H-55

This subparcel is a residential area bounded by Hudson Street on the west and a hillside on the east. The area is unoccupied and contains a former automobile garage (Building 908) and several former residences, including Buildings H, I, and R-26. No SI or IR sites are present in this subparcel. Asbestos abatement activities were conducted at Buildings H, I, and R-26 in 1995 (see Table 5-3).

5.1.1.9 Subparcel H-56

This subparcel is a vacant area bounded by Coleman Street and the hillside. The area is unoccupied and contains a paved lot formerly used for parking. No SI or IR sites are present in this subparcel.

5.1.1.10 Subparcel H-57

This subparcel is a residential area bounded by Coleman Street, Hudson Avenue, and the hillside. The area is unoccupied and contains Building 921, formerly used as the Bachelor Officers' Quarters; this building is currently vacant. Some piles of clean fill soil to be used as backfill at IR-59 JAI in Subparcel H-53 were observed in the parking lot adjacent to Building 921 during the 1995 VSI. Water was observed leaking from the loading dock on the southeast corner of Building 921. The water flowed to a sump in the driveway in the loading dock. No SI or IR sites are present in this subparcel.

5.1.1.11 Subparcel H-OS

This subparcel is an open space area that includes Building 901 (the former Officers' Club), Building 102 (former post office), Hillside Drive, SI site SI-19, and several former residences, including Buildings D and F. SI-19 consisted of the medians in the parking lot of Building 901, which contained sandblast waste. This sandblast waste was removed in 1993. Building 102 was formerly used as a post office. Buildings 102 and 901 are currently vacant. The remainder of this subparcel is undeveloped hillside. The asbestos abatement program in Parcel A is documented in the Parcel A asbestos remediation report prepared by ECC (ECC 1995). Asbestos abatement activities were conducted at Buildings F, 102, and 901 in 1995 (see Table 5-3).

SI-19 was investigated during the Parcel A SI; results are documented in the Parcel A SI report (PRC 1993b) and are summarized in Appendix G of this report. As documented in the Parcel A ROD (PRC 1995h), remedial actions are not required in Subparcel H-OS.

5.1.1.12 Subparcel N-1

This subparcel is located in both Parcels A and B. The Parcel A portion of Subparcel N-1 contains Buildings 19 and 100, demolished Building 917, and a parking lot. Building 19 is a former apartment building and is currently unoccupied. Building 100 is electrical Substation AA. Transformers were

observed in this building during the 1995 VSI. Building 917 was formerly a commercial store and was demolished. No SI or IR sites are present in the Parcel A portion of this subparcel.

5.1.1.13 Subparcel N-3

This subparcel is located in both Parcels A and B. The Parcel A portion of Subparcel N-3 is a large paved area, formerly used for temporary residences and for a parking lot, that continues into Subparcel N-2 (see Section 5.1.2.2). Subparcel N-3 also contains Building 916, which houses Dago Mary's restaurant, an operating commercial establishment. Other than household cleaning items, no hazardous materials were observed in this building in 1997. No SI or IR sites are present in the Parcel A portion of this subparcel.

Remedial actions in the Parcel B section of this subparcel are scheduled to begin in fiscal year 1998. No remedial actions are required in the Parcel A portion of this subparcel (PRC 1995h).

5.1.1.14 Subparcel N-17

This subparcel is located in both Parcels A and C. The Parcel A portion of this subparcel contains Building 101 (former Administration Office) and Building 110 (former Marine Barracks). These buildings are currently leased to J. Terzian and are used for art activities and office space.

- Building 101 was formerly used by the Navy as administrative offices and for blueprint and photograph developing until 1974. It is currently subleased to approximately 135 tenants (artists). The public areas of the building are generally in good repair, with good housekeeping practices. Various paint spills on and in the vicinity of sinks indicate that some disposal of paints and possibly other liquids has occurred in the past. No "fresh" spillage was observed. Hazardous materials were observed in the majority of the lease areas inspected in 1997 (such as thinners, paints, solvents, photochemical solutions, petroleum hydrocarbons, and other artisan materials). The majority of the area surrounding Building 101 is paved with asphalt. The asphalt is in good condition. One metal cabinet, labeled "flammable cabinet," was located outside the building and contained various chemicals including paint, gasoline, oils, small propane bottles, and varnishes. No staining, chemical odors, or distressed vegetation were noted outside of Building 101 (Air Force Army Construction, Inc. [AFA] 1996a). Asbestos abatement activities were conducted at the building in 1995 (see Table 5-3).

- Building 110 was formerly used by the Navy as a barracks and a galley until 1974. It is currently subleased to approximately 20 tenants (caterers, artisans, offices, computer manufacturers, and custom framers). Housekeeping conditions of the lease areas inspected vary from good to poor. Hazardous substances were observed in the majority of the artisan lease areas inspected in 1997 (thinners, paints, photochemical solutions, and other artisan materials). A 1,000-gallon propane tank at the south end of the building supplies gas to a kitchen area. The majority of the area surrounding Building 110 is paved and in good condition. No spills, stains, chemical odors, or distressed vegetation were noticed outside Building 110 (AFA 1996a). Asbestos abatement activities were conducted at the building in 1995 (see Table 5-3).

No SI or IR sites are present in this subparcel.

5.1.1.15 Subparcel S-46

This subparcel is located in both Parcels A and E. The Parcel A portion of this subparcel contains Buildings 808 and 821. No SI or IR sites are present in the Parcel A portion of this subparcel. The 4 acres adjacent to the buildings contained stored equipment, debris, and an ammunition bunker (S-807) during the 1995 VSI.

- Building 821 is a two-story concrete building that was used as an X-ray facility for the NRDL; this building is currently unoccupied. Some floor stains were observed inside Building 821 in 1995.

- Building 808 is currently leased to Precision Transport and used as a warehousing facility. It was formerly used by the Navy as a warehouse for supplies such as dry goods, commissary items, paints and hazardous substances, industrial items, and small-caliber munitions until 1974. The warehouse contains truck-loading docks on the west and east side of the building. A railroad spur enters through large sliding doors on the west and east of the building. The building is in good repair and housekeeping practices were good throughout the building. In 1997, pallets of copier paper and toner cartridges were observed inside the building. In addition, 10 to 12 25-pound propane tanks used to power the forklifts were observed. Two 20-gallon drums of motor oil were observed outside the building.

5.1.1.16 Subparcel S-47

This subparcel contains Buildings 813, 819 (Pump Station A), and 823 (adjoined to Building 819); UST S-812; and site SI-77. Building 813 is an unoccupied office building formerly used by Navy contractor personnel during environmental investigations. This building is currently proposed for lease to the SFRA. Building 819 is Pump Station A and is a concrete building in good condition. Noxious odors from the sewage were noted during the 1995 VSI. Stained concrete was observed by the back door of this

building. A transformer was observed on a utility pole southeast of the building. Oils and paints were observed in the building. Building 823 adjoins Building 819 and contains the remnants of a pump system. It is currently used as a stand-by generator building. SI-77 consists of the location of UST S-812, which was removed in 1991 from an area adjacent to Building 813.

Soil at SI-77 was investigated during the Parcel A SI; results are documented in the Parcel A SI report (PRC 1993b) and are summarized in Appendix G of this report. As documented in the Parcel A ROD (PRC 1995h), remedial actions are not required in Subparcel S-47.

5.1.2 Parcel B

Parcel B contains 17 subparcel units, six of which overlap (p) other parcels, as shown on Figure 1-3 and Table 1-1. The SI and IR sites in Parcel B are shown and described on Figures 5-1 and 5-3, in Table 5-1, and in Appendix G of this report.

5.1.2.1 Subparcel N-1

This subparcel is located in both Parcels A and B. Subparcel N-1 contains part of a parking lot. The Parcel B portion of this subparcel contains a small portion of site IR-18, a former waste oil disposal area that is mainly in Subparcels N-2 and N-3 (see Sections 5.1.2.2 and 5.1.2.3). IR-18 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in the Parcel B portion of Subparcel N-1. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.2 Subparcel N-2

Subparcel N-2 contains a large paved area, formerly used for temporary residences and for a parking lot. This subparcel contains portions of IR sites IR-07 and IR-18. IR-07, the Submarine Base Area, was formerly used to paint submarines; sandblast waste was generated and disposed of in this area. At IR-18, Triple A allegedly disposed of 50,000 to 100,000 gallons of waste oil onto the ground surface; subsequently, the area was paved. IR-18 is currently a 3.6-acre parking lot that extends into Subparcels N-1 and N-3. IR-07 and IR-18 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this

report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-2. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.3 Subparcel N-3

This subparcel is located in both Parcels A and B. Subparcel N-3 is a continuation of a large paved area, formerly used for temporary residences and for a parking lot, described in Subparcel N-2. This subparcel contains a small shed that formerly housed a PCB-containing transformer that was stolen (Heilshorn Environmental Engineering [HEE] 1995a). A large oil stain was observed on the pavement near the shed during the 1995 VSI.

The Parcel B portion of this subparcel contains portions of sites IR-07 and IR-18. IR-07, the Submarine Base Area, was formerly used to paint submarines; sandblast waste was generated and disposed of in this area. At IR-18, Triple A allegedly disposed of 50,000 to 100,000 gallons of waste oil onto the ground surface; subsequently, the area was paved. IR-07 and IR-18 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-3. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.4 Subparcel N-4

Subparcel N-4 contains Buildings 103, 104, and 117. Buildings 103 and 117 were formerly used as barracks. Building 104 was formerly an armory. Buildings 103, 104, and 117 are currently leased to J. Terzian for art activities. ACM was observed in these buildings during the 1995 VSI. Asbestos abatement activities at Buildings 103, 104, and 117 were conducted from 1995 through 1997 (see Table 5-3). Additional abatement is ongoing in Parcel B. Three transformers were observed near Buildings 103 and 104 during the 1995 VSI. Two of these transformers were labeled as containing less than 50 parts per million (ppm) PCBs. No PCB content label was observed on the third transformer.

- Buildings 103 and 104 are subleased to approximately 22 and 25 tenants, respectively (artisan studios). Materials observed in these buildings during the 1997 tenant survey include paints, glues, thinners, dyes, inks, resins, photographic chemicals, solvents, and other chemicals used by artisans. No staining, chemical odors, or distressed vegetation were noted outside Buildings 103 and 104. The majority of the area surrounding Buildings 103 and 104 is unpaved (AFA 1996a).

- Building 117 is subleased to approximately 20 tenants (artisans). Materials observed in this building during the 1997 tenant survey include paints, glues, thinners, dyes, inks, resins, photographic chemicals, solvents, and other chemicals used by artisans. The building is surrounded by landscaped areas. No stains, chemical odors, or distressed vegetation were noted (AFA 1996a).

This subparcel also consists of the southwest portion of site IR-62, which lies mainly within Subparcel N-5 (see Section 5.1.2.5). IR-62 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), no remedial actions are required in Subparcel N-4.

5.1.2.5 Subparcel N-5

This subparcel consists of Buildings 115 and 116, the former locations of demolished Buildings 118 and 119, the former locations of two USTs (S-135 and S-136), site IR-62, and a portion of site IR-23, and exploratory excavation removal action site EE-02. Buildings 115 and 116 were formerly used as submarine training facilities. Asbestos abatement activities were conducted in Buildings 115 and 116 in 1996 (see Table 5-3). Buildings 118 and 119 were formerly used as a mess hall and a barracks, respectively. IR-62 consists of Buildings 115 and 116 and the former location of UST S-135, which was removed in 1993. UST S-135 was a 1,250-gallon fuel oil tank located on the north side of Building 116. The portion of IR-23 in this subparcel consists of the former location of UST S-136, which was removed in 1993. UST S-136 was a 750-gallon fuel oil tank located near the east end of demolished Building 118. Exploratory excavation removal action site EE-02 is in IR-23 near Building 116; 540 yd^3 of soil was removed from this excavation site in 1997.

- Building 115 is currently leased to Finish Works, which occupies the first floor of Building 115 for cabinet-making activities and storage. On the 2nd floor, one room is subleased as a music studio and one room is subleased as an art studio. The remainder of the building is vacant except for some general debris left by former tenants. Building 115 is attached to Building 116 by a common wall. A 500-gallon AST previously existed in a concrete vault in the southwest portion of the building. An electrical substation is located in the northeast corner of the building. Housekeeping is fair. The current tenant stores paints, thinners, glues, and other woodworking materials in a 10-foot by 10-foot metal-clad vault. A loading dock and paved area exist on the northeast side of Building 115. The remainder of the building is surrounded by dry grass, trees, and shrubs. No staining, chemical odor, or distressed vegetation were noted (AFA 1996a).

- Building 116 is currently leased to Frame Works for picture framing activities. Some structural damage consisting of a vertical support pole that had been knocked off the pier block foundation had settled and approximately 8 inches was observed at the eastern portion of the building during the 1995 VSI. Glues, paints, solvents, and other woodworking materials were observed stored in this building. Flammable materials are stored in a yellow cabinet in the parking area behind the building. Areas along the east and north portions of the building are paved and in fair condition. Small oil stains were observed in the parking areas. No chemical odor or distressed vegetation were noted (AFA 1996a).

Sites IR-23 and IR-62 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the Parcel B ROD (TtEMI 1997a), no remedial actions are required in Subparcel N-5.

5.1.2.6 Subparcel N-6

Subparcel N-6 contains Buildings 121, 122, and 146; site IR-61; a portion of site IR-23; and a very small portion of site IR-07. The portion of IR-23 in this subparcel consists of Buildings 121 and 146, and two exploratory excavation removal sites (EE-01 and EE-03). EE-01 is in IR-23 between Buildings 121 and 146; 19 yd^3 of soil was removed from this excavation site in 1997. EE-03 is in IR-23 near Building 146; 295 yd^3 of soil was removed from this excavation site in 1997. Site IR-61 consists of Building 122, an electric power generating substation.

- Building 121 was formerly a civil training center and is currently unoccupied. Three electrical transformers were formerly located on a platform between Buildings 121 and 122. Hazardous materials were not stored in Building 121. Asbestos abatement activities were conducted in 1995 (see Table 5-3).

- Building 122, which is in IR-61, is electrical Substation V and includes large transformers, other electrical equipment, and a support cradle for a storage tank. The remaining transformers were labeled as containing less than 50 ppm PCBs or less than 1 ppm PCBs.

- Building 146 was a former photographic laboratory and is currently unoccupied. Building 146 is part of IR-23 and is classified as a chemical and radiation site. The radiation site is an area that was used to store check sources. Photographic chemicals and asbestos were observed in this building. Several fume hoods were observed on the first and second floors. Floor plates or covered compartments were observed in the northwest part of the building and in the south corner. Those in the south corner have paint or resin surrounding them. Asbestos abatement activities were conducted in 1995 (see Table 5-3).

Sites IR-07, IR-23, and IR-61 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the Parcel B ROD (TtEMI 1997a), no remedial actions are required in the IR-07 portion of Subparcel N-6. However, remedial actions are required for soil in the IR-23 and IR-61 portions of Subparcel N-6. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.7 Subparcel N-7

This subparcel includes Buildings 113, 113A, and 120, as well as demolished Building 114. A discrepancy exists regarding the building numbers. Building 113A, which is connected to Building 113, is sometimes referred to as Building 114. This subparcel includes SI site SI-31 and IR site IR-42. SI-31 consists of demolished Building 114, which was used as office space. IR-42 consists of Buildings 113 and 113A.

- Buildings 113 and 113A are connected and were the tug and submarine maintenance and salvage shops. Building 113 is currently unoccupied. The building previously designated as Building 113A is currently leased under the 114 designation. Building 114 has been leased to Smith-Emery, an engineering firm, since 1987 and is being used for testing of soil, concrete, and windows and for equipment storage. It was formerly used by the Navy as a tug and submarine maintenance shop. Materials used in this building include, but are not limited to, sulfur compounds, solvents, clay, sand, hydrochloric acid, bases, salts, propane, gasoline, lubricants, and kerosene. Contaminated soil is not handled or tested in this facility. Waste metal produced is sent to a recycler. Fewer than 10 gallons of liquid solvent are generated per year and are transported off site for disposal. The public areas of the building were in fair condition with poor housekeeping practices. The Parcel B SI reported that various spills on and in the vicinity of the drains indicate that some disposal of liquids has occurred in the past (HLA 1994b). Fresh spillage was not observed during the 1997 tenant survey. The asphalt area southwest of Building 114 is paved with asphalt and in good condition. No staining or chemical odors were noticed outside the building in the leased area. A locked metal shipping container was observed immediately south of Building 114 (113A) and is used by Smith-Emery to store nuclear testing gauges. These gauges are used to test in-place density and moisture content of compacted fill at construction sites. The gauges contain small sources of nuclear material. Smith-Emery maintains the required records and monitors the radiation level in the shipping container. All radioactive material is enclosed within the gauges (AFA 1996c). Asbestos abatement activities were conducted in Building 113/113A in 1996 (see Table 5-3). This building is part of IR-42 and is referred to as Building 113/113A in Appendix G of this report.

- Building 120 is currently leased to the Police Athletic Club and is used as a gym and for other recreational purposes. It was formerly the Enlisted Men's Club. Housekeeping is very good. In an area used for storing boats, a flame-proof metal locker contained 3 to 4 gallons of oil-based paints and varnishes. An aboveground pool is behind Building 120 (southeast side). Pool chemicals and other maintenance chemicals are stored in a shed. The area surrounding Building 120 consists of paved areas with landscaped areas. No stains, chemical odors, or distressed vegetation were noted near the lease area (AFA 1996a). Asbestos abatement activities were conducted in Building 120 in 1996 (see Table 5-3).

SI-31 was investigated during the Parcel B SI due to the suspected presence of sandblast waste in the vicinity of demolished Building 114; SI results are documented in the Parcel B SI report (HLA 1994b). IR-42 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-7. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.8 Subparcel N-8

Subparcel N-8 includes Building 123 and site IR-10. Building 123 is currently unoccupied and was the former Battery Overhaul and Electroplating Shop. During the 1995 VSI, the exterior of Building 123 was stained with an unknown dark material, possibly oil, along the north wall near a pump. Stained floors and five treatment or process tanks were observed in the interior of Building 123; some of these tanks were labeled "acid." Building 123 also contained pits, sumps, asbestos pipe insulation, and PCB-containing electrical equipment during the 1995 VSI. Waste acids were generated by plating operations in Building 123. Asbestos abatement activities were conducted in Building 123 in 1996 (see Table 5-3).

IR-10 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-8. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.9 Subparcel N-9

This subparcel includes Buildings 125, 128, 131, and 159, and a portion of site IR-24. Building 125 is leased to Bridenthal Cabinetry for workshop and office space; Building 128 is leased to the San Francisco Police Department (SFPD) for storage. Building 131 is Electrical Substation U and

formerly contained PCB-containing electrical equipment. Building 159 was a former latrine and is currently unoccupied. Several transformers were observed on utility piles along roadways in this subparcel during the 1995 VSI. Asbestos abatement activities were conducted in 1996 and 1997 in Buildings 125, 128, 131, and 159 (see Table 5-3). Site IR-24 consists of all the buildings and most of the land area in this subparcel.

- Building 125 is currently leased to Tad Bridenthal, a cabinetmaker, who in turn subleases several areas to other artisans (sculptor and photographer) and for office space. It was formerly used by the Navy as a cafeteria. The public areas of the building are in good repair. Good housekeeping practices were observed. Sinks in the restrooms were posted with notices regarding proper disposal of hazardous substances. Most of the first floor is a woodworking shop; latex paint and 3 gallons of mineral spirits were observed in this area. An art studio on this floor contained acrylic paint, oil-based paint, and 2 gallons of turpenoid. A music studio on the first floor and offices on the second floor contained no hazardous substances. The majority of the surrounding outside area is paved with asphalt in generally good condition. Two small propane tanks were observed outside of the building. No staining, chemical odors, or distressed vegetation were noted near the leased area (AFA 1996c).

- Building 128 is leased to the SFPD and is used as a warehouse to store confiscated items. It was formerly used by the Navy as a machine shop. During the 1997 tenant survey, automobiles, motorcycles, a boat, and a recreational vehicle were stored in the building. The site reconnaissance indicated that the public areas of the building were generally in good repair, with good housekeeping practices. Limited auto maintenance is performed on the confiscated vehicles while they are in the possession of the SFPD. An area used for changing motor oil was observed in the building; a full oil pan and oil stains on the floor were observed. The transformer room, walled off from the rest of the building interior, contained two transformers. Peeling paint was evident throughout Building 128 both inside and outside. The area surrounding Building 128 is paved and in good condition (AFA 1996c).

- Building 131 is electrical substation U. It is currently not being used.

- Building 159 was used as a latrine. It is currently not being used.

IR-24 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-9. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.10 Subparcel N-10

Subparcel N-10 includes Building 109, demolished Buildings 111 and 112, site IR-06, and a small portion of site IR-42. Building 109 is labeled 108 on older maps. Demolished Building 111 was used as a lubrication oil pumphouse and demolished Building 112 was used as a diesel oil pumphouse. Site IR-06 is a former tank farm used by the Navy to store diesel fuel and lubrication oil. In addition, Triple A stored stoddard solvent in this area from 1976 to 1986. Eighteen ASTs were removed from the tank farm.

- Building 109 is the former HPS police station and is currently used for office space. ACM was observed in the basement and main floor of Building 109 during the 1995 VSI. Asbestos abatement activities were conducted in 1997 (see Table 5-3). A small concrete pad with electrical connections south of the building may indicate a former transformer location. No other tanks or sumps were observed.

IR-06 and IR-42 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. A removal action at IR-06 was conducted in 1997; results are documented in the completion report (IT 1998a). As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-10. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.11 Subparcel N-11

This subparcel is located in both Parcels B and C; the Parcel C portion of this subparcel is discussed in Section 5.1.3.1. The Parcel B portion of Subparcel N-11 consists of demolished Building 124 and small portions of sites IR-10 and IR-24. Former Building 124, which is part of IR-24, was an acid mixing plant where five ASTs containing sulfuric acid and electrolytes were formerly used. The building was demolished and the ASTs were removed between 1979 and 1981. IR-10 is mainly in Subparcel N-8 (see Section 5.1.2.8). IR-10 and IR-24 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in the Parcel B portion of Subparcel N-11. Remedial actions in the Parcel B portion of this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.12 Subparcel N-12

This subparcel contains Buildings 130 and 156, site IR-20, and a portion of site IR-24. IR-20 consists of a paved area and Building 156. The southwest portion of IR-20 was used as a storage yard for chemicals and reclaimed oil. The portion of IR-24 in this subparcel contains Building 130.

- Building 130 was formerly the Navy's hazardous waste accumulation and storage area for drummed waste generated during the IRP-related activities. The building is currently vacant. ACM was observed on a large pipe fitting located on the east side of Building 130. Asbestos abatement activities were conducted on unspecified dates (see Table 5-3).

- Building 156 was formerly a rubber shop and is currently unoccupied. The floor is stained, but hazardous materials were not observed during the 1995 VSI. ACM was observed on piping in Building 156. Asbestos abatement activities were conducted in 1996 (see Table 5-2).

IR-20 and IR-24 were investigated during the Parcel B RI; results are documented in the Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-12. Remedial actions in this subparcel are scheduled to begin in fiscal year 1998.

5.1.2.13 Subparcel N-13

This subparcel is located in both Parcels B and C. It contains no buildings and no Parcel B IR sites. A tank trailer, a dilapidated shed, and a crated gearing mechanism labeled "DRMO" were observed in this subparcel during the 1995 VSI.

5.1.2.14 Subparcel N-14

This subparcel is located in both Parcels B and C. The Parcel B portion of this subparcel contains a portion of site IR-26. IR-26 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), no remedial actions are required for Subparcel N-14.

5.1.2.15 Subparcel N-15

This subparcel contains Buildings 157 and 163, portions of sites IR-20 and IR-26, and exploratory excavation removal action site EE-04. Building 157, which is in IR-26, was formerly used for metal

fabrication, welding, and as a "Nondestructive Test Lab." A thin layer of soil covers the asphalt portion of the floor. Staining was observed around a drain in the center of the asphalt floor area during the 1995 VSI. Exploratory excavation removal action site EE-04 is in IR-26 near Building 157; 315 yd^3 of soil was removed from this excavation site in 1997. Building 163 was the Rubber Shop Annex. Asbestos abatement activities were conducted in Building 157 in 1996 and in Building 163 in 1997 (see Table 5-3).

IR-20 and IR-26 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-15. Remedial actions are scheduled to begin in this subparcel in fiscal year 1998.

5.1.2.16 Subparcel N-16

Subparcel N-16 contains Buildings 129, 132, 133, 140, and 141; demolished Building 142A; Berths 55, 56, 57, and 58; most of site IR-26; and a portion of site IR-24. One exploratory excavation site (EE-05) is located in this subparcel. EE-05 is in IR-26 near Building 141; 501 yd^3 of soil was removed from this excavation site in 1997.

- Building 129 was the Submarine Pier Office. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 132 was a barracks. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 133 was a latrine. An internal inspection of this building was not conducted.

- Building 140 is the pumphouse. Transformers were observed on the east and south sides of this station during the 1995 VSI. Leaked oil was observed beneath the turbine valves inside the substation. ACM was observed in the building during the 1995 VSI. ACM remediation in Building 140 is on hold per instruction of the HPS CSO. Remediation is to be completed (see Table 5-3; PWC 1997).

- Building 141 was a former industrial shop. A transformer was observed on the south side of the building during the 1995 VSI. ACM was observed on pipes throughout the building during the 1995 VSI. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 142A was demolished. It was formerly a storage building and air raid shelter.

IR-24 and IR-26 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. The exploratory excavation removal action results for IR-26 are documented in the completion report (IT 1997a). As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-16. Remedial actions are scheduled to begin in this subparcel in fiscal year 1998.

5.1.2.17 Subparcel N-OS

This subparcel consists of the area along the shoreline at the northeast corner of HPS. It is located in both Parcels B and C. Buildings 144 and 145; Berths 61 through 64; Dry Docks 5, 6, and 7; sites IR-07 and IR-60; and portions of sites IR-23 and IR-24 are within this subparcel. It includes an undeveloped area, an industrial area, and piers. Items of significant environmental concern were not observed in the open space or industrialized area during the 1995 VSI. No items of environmental concern were observed on the piers except for tar at the end of the piers.

IR-07, the Submarine Base Area, was formerly used to paint submarines; sandblast waste was generated and disposed of in this area. The portion of IR-23 that is in this subparcel consists of Buildings 144 and 145. Building 144 is a restroom facility. Building 145 is a saltwater pumphouse formerly used to pump seawater to the hydrant system for fire fighting. The western portion of IR-24, which is a paved vacant area, is in this subparcel. IR-60 consists of Dry Docks 5, 6, and 7. These dry docks were used for submarine maintenance and repair.

IR-07, IR-23, IR-24, and IR-60 were investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. As documented in the Parcel B ROD (TtEMI 1997a), remedial actions are required for soil in Subparcel N-OS. Remedial actions are scheduled to begin in this subparcel in fiscal year 1998.

5.1.3 Parcel C

Parcel C contains 15 subparcel units, six of which overlap (p) other parcels, as shown on Figure 1-3 and Table 1-1. The IR sites in Parcel C are shown and described on Figures 5-1 and 5-4, in Table 5-1, and in Appendix G of this report.

5.1.3.1 Subparcel N-11

This subparcel is located in both Parcels B and C; the Parcel B portion of this subparcel is discussed in Section 5.1.2.11. The Parcel C portion of Subparcel N-11 consists of Building 134 and site IR-25; IR-25 was initially investigated as part of Parcel B but was moved to Parcel C because of the presence of dense nonaqueous-phase liquids (DNAPL) beneath Building 134. Building 134 was formerly a warehouse and machine shop. Since 1985, the building has been leased to Odaco, Inc. (Odaco), a refrigeration company. A large concrete dip tank and degreasing vat, labeled "chlorinated materials" and containing sludge, is built into the foundation of Building 134. This tank drains to a sump that is partially inside and partially outside the building.

During the 1997 tenant survey of Building 134, materials observed in a shop area inside the building consisted of cylinders of freon and acetylene, a 5-gallon drum of corrosive, various household cleaners, and sandblast waste in a sandblasting cabinet. In addition, five 150-pound cylinders used for refrigerant evacuation and transfer were observed. According to Odaco, all gases are recycled by a subcontractor and ultimately go to DuPont. A tool room in Building 134 contained several quarts of motor oil and a steel cabinet in which flammable materials such as paints, lubricants, and paint thinner are stored. In an adjacent area, containers of solvents, lubricants, and hydraulic fluid were observed; no leaks were evident. Eight large cylinders of refrigerant were observed in a former maintenance shop. In the southwest end of the building, 55-gallon drums of used refrigerant, vacuum pump oil, cleaning solvent, and waste oil were observed. Staining and leakage were not observed in this area. The outside area is not used by Odaco.

IR-25 was investigated during the Parcel B RI; results are documented in the draft final Parcel B RI report (PRC 1996a) and are summarized in Appendix G of this report. Subsequent to the RI, IR-25 was moved to Parcel C. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be required for soil and groundwater in Subparcel N-11.

5.1.3.2 Subparcel N-13

This subparcel is located in both Parcels B and C. No buildings are present in the Parcel C portion of this subparcel. This subparcel contains most of site IR-58, which consists of a scrap yard. One exploratory

excavation removal action site (EE-11) is located in this subparcel. EE-11 is in IR-58; 17 yd^3 of soil was removed from this excavation site in 1997. The exploratory excavation removal action results for IR-58 are documented in the completion report (IT 1997a). IR-58 was investigated during the Parcel C RI; results are documented in the draft final Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial activities are expected to be conducted for soil in Subparcel N-13.

5.1.3.3 Subparcel N-14

This subparcel is located in both Parcels B and C. The Parcel C portion of this subparcel contains Buildings 135 and 206, a small portion of site IR-58, and most of site IR-64. Building 135 is electrical Substation G, which formerly housed PCB-containing electrical equipment. IR-58 consists of a scrap yard. IR-64 consists of Building 206. Building 206 is electrical Substation A. The building is currently unoccupied. The top of Building 206 is demolished. The concrete foundation and below-grade sections remain in place. Most of the below grade section was under water during the inspection. Seven sumps are present inside the building, six of which were probably drip basins for equipment. PCB-containing electrical equipment was formerly housed in this building. ACM and PCBs may be present in this building, but were not observed during the 1995 VSI. IR-58 and IR-64 were investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial activities are expected to be conducted for soil in Subparcel N-14.

5.1.3.4 Subparcel N-17(p)

This subparcel is located in both Parcels A and C. It contains no buildings and no SI or IR sites.

5.1.3.5 Subparcel N-18

This subparcel contains Buildings 154, 217, 241, and 280; demolished Buildings 278 and 279; a portion of site IR-29; sites IR-30 and IR-63; and exploratory excavation removal action site EE-10. EE-10 is in IR-29 near Building 279; 14 yd^3 of soil was removed from this excavation site in 1997.

- Building 154 is a wooden building with two associated sheds. The three structures are in fair condition. Building 154 was formerly used as office space and is currently unoccupied. ACM was not observed in Building 154.

- Building 217 is a former sheetmetal shop and is currently unoccupied. It is in good condition with some oil stains on the floor. A former dipping tank and trench sump were observed. ACM was observed in Building 217; abatement activities were conducted in 1996 (see Table 5-3).

- Building 241 is a former forge shop and is currently unoccupied. Discolored soil, bricks from a refractory-lined oven, and ACM were observed throughout the building during the 1995 VSI. Asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Demolished Building 278 was used for storage. Demolished Building 279 housed material storage racks.

- Building 279 is demolished. It was used as a material storage rack.

- Building 280 was in poor condition and labeled as the former Aluminum Cleaning Facility. This building is currently unoccupied. Signs on the wall indicate the former location of a series of dip or cleaning tanks. Asbestos abatement activities were conducted in 1997 (see Table 5-3). A transformer labeled as containing less than 50 ppm PCBs was observed adjacent to Building 280 during the 1995 VSI.

The portion of IR-29 that is in this subparcel consists of Buildings 217 and 280 and demolished Building 279. IR-30 consists of Building 241. IR-63 consists of the former site of demolished Building 278, which is a vacant lot surrounded by a chain-link fence. IR-29, IR-30, and IR-63 were investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), no remedial activities are expected to be conducted for soil or groundwater in Subparcel N-18.

5.1.3.6 Subparcel N-19

This subparcel contains Building 258 and the former location of UST S-219. This subparcel is entirely within site IR-28. UST S-219 was associated with former operations at Building 251, which is in Subparcel N-20; however, UST S-219 was physically located in this subparcel. UST S-219, a 1,000-gallon gasoline and diesel tank, was removed in 1993. Further investigation was not recommended

for UST S-219 because only minor concentrations of VOCs and no discoloration or odors were detected in soil samples (PRC 1994c).

- Building 258 is a concrete and metal building in good condition. It was the Nonferrous and Ferrous Processing Plant and former Pipefitters Shop and is currently unoccupied. The east end of the building contains large degreasing and pickling dip tanks and drainage sumps. Nine ASTs were associated with the building; these ASTs stored fuel oil, gasoline, and distilled water. The ASTs are no longer present in this subparcel. Heavy oil stains were observed on the floor near former machine locations during the 1995 VSI. ACM was observed in this building; abatement activities were conducted in 1995 (see Table 5-3).

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil in Subparcel N-19.

5.1.3.7 Subparcel N-20

This subparcel contains Buildings 214, 251, and 252, and the former location of UST S-251. Almost all of this subparcel, including the buildings and former UST location, are within site IR-28. UST S-251 was a 1,000-gallon solvent tank adjacent to the north side of Building 251; this UST was removed in 1991. Further investigation was folded into the IR-28 RI.

- Building 214 was used as office space by the Navy and Triple A, and is currently unoccupied. The building has been severely vandalized. Room 105 was used as a Health Physics Counting Room by the NRDL; this building was cleared by the U.S. Atomic Energy Commission (AEC) upon decommissioning of the shipyard. ACM was observed in this building during the 1995 VSI; asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Building 251 was formerly the Industrial Relations and Control Tool Room. It was used to store tools and is currently unoccupied. One 900-gallon solvent AST was formerly located at the building. ACM was observed in the building during the 1995 VSI; asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Building 252 was the former Golden Anchor Coffee Shop. The building is currently unoccupied. It is structurally in good condition, although the interior has deteriorated. Small carbon dioxide canisters used for carbonating soft drinks were observed in Building 252. ACM was not observed in the building.

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil and groundwater in Subparcel N-20.

5.1.3.8 Subparcel N-21

Subparcel N-21 contains Buildings 204, 205, 207, and 208; the former locations of USTs HPA-06 and S-214; Dry Docks 2 and 3; and sites IR-27 and IR-64. IR-27 consists of Building 205 and former USTs HPA-06 and S-214. UST HPA-06 was a 24,000-gallon water tank; this UST was closed in place in 1993. UST S-214 was a 22,000-gallon fuel oil tank; this UST was closed in place in 1991.

- Building 204 is a secondary pumphouse near Dry Dock 2. It is currently unoccupied and in good condition. ACM was not observed during the 1995 VSI.

- Building 205 is the main pump and compressor house for Dry Dock 2. The building is currently unoccupied and in fair condition. Oil was observed in pans beneath the motors during the 1995 VSI. The building contained PCB-containing electrical equipment during the 1995 VSI. One AST is present near Building 205. USTs HPA-06 and S-214 were closed in place near Building 205. ACM was observed in Building 205 during the 1995 VSI; asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 207 is a restroom facility. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 208 was the Canteen and Service Shop. It is currently unoccupied and in poor condition. ACM was observed in the building during the 1995 VSI; asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Dry Dock 2 was built between 1901 and 1903 by the San Francisco Dry Dock Company. at the time, it was the largest dry dock in the world. Dry Dock 2 is 750 feet long, 122 feet wide at the top, and 32 feet deep at high tide.

- Dry Dock 3 was built between 1916 and 1918 at the former site of Dry Dock 1. It was designed to accommodate the largest vessels that could pass through the Panama Canal. Dry Dock 3 was built with a Navy subsidy and used to repair battleships. Dry Dock 3 is 1,004 feet long.

IR-27 and IR-64 were investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not

yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil in Subparcel N-21.

5.1.3.9 Subparcel N-22

Subparcel N-22 contains the western half of Building 231. This subparcel is entirely within site IR-28. Building 231 is an unoccupied former heavy industrial machine shop with sumps, sandblast rooms, and shallow and deep pits, which are probably former equipment locations. The building is large and extends into Subparcel N-OS. It is in good structural condition, but has poor housekeeping. ACM and metals debris were observed in the building during the 1995 VSI. Asbestos abatement activities were conducted in 1996 (see Table 5-3). Oil stains and pooled oil were observed on the lower and upper floors of Building 231 during the 1995 VSI. Wood block floors were badly buckled on the upper and lower floors.

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil and groundwater in Subparcel N-22.

5.1.3.10 Subparcel N-23

This subparcel contains Buildings 203, 215, 275, 282, and S-211; the former locations of USTs S-203, S-211, S-212, and S-213; and most of site IR-29. IR-29 consists of Buildings 203, 275, 282, and S-211, and the former UST locations. UST S-203 was a 500-gallon gasoline tank and was removed in 1991. USTs S-211, S-212, and S-213 were removed in 1993. UST S-211 was a 3,000-gallon fuel oil tank; UST S-212 was a 4,500-gallon fuel oil tank; and UST S-213 was a 35,000-gallon water condensate tank.

- Building 203 was formerly and is currently used as a power plant, and is designated Substation H. The building is in fair condition, but waste piles were observed throughout the building. Transformers have been removed from Building 203. Six ASTs were observed outside to the east of Building 203. Four tanks apparently included a water-softening system and an acid storage tank. Two tanks were elevated on the acid tank shed or on the roof of the building on the east side. A boiler was located in a shed on the south side of Building 203. A large chiller-dryer unit was located adjacent to the boiler shed. ACM was observed on the boiler shed on the chiller-dryer unit during the 1995 VSI. Asbestos abatement activities were

conducted in 1995 and 1996 (see Table 5-3). USTs S-203 and S-209 through S-213 were formerly located near Building 203 but have been removed.

- Building 215 is the HPS fire station. It is a working fire station in good condition. Flammable materials are stored in an exterior cabinet. A vehicle wash pad is located on the west side of Building 215. A sump on the vehicle wash pad drains to the sanitary sewer. ACM was observed in the building; asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Building 275 was formerly used by the Navy as the sheetmetal annex. Building 275 is currently the aluminum casting shop for Ermico Enterprises (Ermico). Aluminum melting, casting, grinding, and polishing operations occur in the building. Equipment and drums are stored outside the building. According to Terry Wade of Ermico, there is one permitted industrial discharge to the sanitary sewer from this building (HEE 1995e). There is one operating floor drain (two have been plugged). According to the lessee, drain samples are collected and analyzed annually and discharge requirements have not been exceeded. The public areas of the building were generally in fair repair with moderate housekeeping practices. The exterior of the building is surrounded by asphalt pavement in generally fair condition. Southwest of the building is a storm drain. Liquids and staining have been previously noted at this storm drain. On the south side of the building are two 500-gallon propane tanks, a double scavenger box, and a volleyball court (AFA 1996d). Asbestos abatement activities were conducted in 1996 in this building (see Table 5-3).

- Building 282 was previously an abrasive blast facility. This building is currently unoccupied. It is a warehouse-type building with a high ceiling and is in good structural condition. ACM was not observed in Building 282 during the 1995 VSI.

- Building S-211 was the boiler building and is currently unoccupied. The building is in fair condition. Some debris was present inside the building during the 1995 VSI.

IR-29 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil in Subparcel N-23.

5.1.3.11 Subparcel N-24

This subparcel contains Buildings 228, 270, 271, 272, 273, and 281; the former locations of USTs HPA-07, HPA-33, HPA-34, and S-215; exploratory excavation removal action site EE-09; and a portion of site IR-28. With the exception of Building 272, this entire subparcel is within site IR-28. UST HPA-07 was a 500-gallon waste oil tank associated with Building 272; this tank was removed on an unknown date.

USTs HPA-33 and HPA-34 were 3,000-gallon and 750-gallon tanks, respectively, used to store gasoline, diesel, and solvents; these USTs were removed in 1993. UST S-215 was a 25,000-gallon paint thinner tank associated with Building 271; this tank was closed in place in 1991. Exploratory excavation removal action site EE-09 is located near the southeast corner of Building 270; 325 yd^3 of soil was removed from this excavation site in 1997.

- Building 228 is a former cafeteria. It is currently unoccupied. ACM was observed in the building during the 1995 VSI; asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 270 is a former paint shop and is now used by Navy subcontractor YYK for office space and storage. A formerly used sandblast booth and baghouse were observed outside this building. Some of the items observed in this building during the 1995 VSI include concrete, paint, and other coatings. Hazardous waste drums are stored for less than 90 days in a covered storage area adjacent to Building 270. ACM was observed in the building during the 1995 VSI; asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 271 is also used by YYK for office space and storage. It was formerly the paint shop annex. It is now used to store hoses and pumps. UST S-215 was closed in place near this building. ACM was observed in the building during the 1995 VSI; asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 272 is leased to Carpenter Rigging, a tarpaulin and canvas manufacturer. Carpenter Rigging subleases the east and west sections of the building to Ermico. It was formerly used by the Navy as one of the shop service groups and for metal casting until 1974. Ermico manufactures boards for skateboards on the west side and assembles go-carts on the east side. The public areas of the building were generally in good repair, except for the leaking west wing roof and the wood block floor in the west bay that was covered with metal plates. Housekeeping practices were good. Staining was observed on the wood block and concrete floors, and near the drains in the northwest and southwest bays of the warehouse. No fresh spills were observed. Hazardous substances observed during the 1997 tenant survey included epoxy, lubricating oil, waste oil, and glue. Peeling paint was observed in the interior and exterior of the building. ACM present in the thermal insulation was observed in the building and marked with orange spray paint; asbestos abatement activities were conducted in 1996 (see Table 5-3). The pavement on the west side of the building is in fair condition. Several 55-gallon drums are stored on the west side of Building 272. UST HPA-07 was located on the east side of the building. The north side of the building contains a PG&E box, a Class AA transformer, and a utilidor (AFA 1996d).

- Building 273 is an electrical substation designated GH-2. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 281 is under lease to SFRA but is currently empty. It was previously the weapons precision facility/machine shop. Two transformers were observed outside Building 281 during the 1995 VSI. USTs HPA-33 and HPA-34 were associated with this building. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil and groundwater in Subparcel N-24.

5.1.3.12 Subparcel N-25

This subparcel contains Buildings 211/253 and 224 and the former locations of USTs HPA-02 through HPA-05 and S-001 through S-004. This subparcel is entirely within site IR-28. All of the former USTs were associated with Building 253. USTs S-001 through S-004 were removed in 1991. USTs HPA-002 through HPA-005 were removed in 1993.

- Buildings 211 and 253 are interconnected. These buildings were formerly used for machining, welding, assembly, and painting. The building is currently used as a storage facility by the U.S. Department of Transportation (DOT), Maritime Administration. Hazardous materials were not observed in the building during the 1997 tenant survey. Gasoline used to power forklifts was stored in three 5-gallon cans. In 1995, ACM was observed in the building; asbestos abatement activities were conducted on an unspecified date (see Table 5-3). The buildings have a common drainage system that drains to a sump on the west end of Building 253. Signs were observed that indicated this was a former storage place for PCB-containing transformers. Transformers were not observed inside Building 211/253 during the 1995 VSI. Transformers were observed on utility poles outside Building 211/253 during the 1995 VSI.

- Building 224 is unoccupied and was formerly used by the Navy as a bomb shelter. Good general housekeeping was observed. There is an adjacent ventilation system structure that may contain ACM siding.

- Eight USTs were removed or closed in place from the area around Building 211/253. USTs HPA-02 and HPA-03 were 1,500-gallon tanks used to store solvents and solvent waste, respectively. USTs HPA-04 and HPA-05 were 1,000-gallon tanks used to store gasoline and diesel. USTs S-001 through S-004 were 3,000-gallon tanks used to store gasoline and diesel. Two ASTs were observed near Building 211/253 during the 1995 VSI. One was labeled "spent soaps," and the other was used to store aquifer test water from the ongoing site investigation and remediation efforts.

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in

mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil and groundwater in Subparcel N-25.

5.1.3.13 Subparcel N-26

Subparcel N-26 contains Buildings 230 and 236; two closed-in-place USTs, S-209 and S-210; and small portions of sites IR-28 and IR-29. Building 230 is in IR-28. USTs S-209 and S-210 were closed in place in 1991; the UST locations are in IR-29. The area is now backfilled and graded. UST S-209 was a 210,000-gallon tank used to store fuel oil. UST S-210 was a 14,000-gallon tank used to store brine.

- Building 230 is currently leased to Ermico, a manufacturer of polyurethane skateboard wheels. The building was formerly used by the Navy as a machine and automotive paint shop. According to an inventory prepared in 1987, lacquer thinner, polishing compounds, paint, acrylic primer surfacer, acrylic lacquer, silicone remover, and oxygen and acetylene gas cylinders were previously stored in this building (Tetra Tech 1994). The types of materials observed in Building 230 during the 1997 tenant survey include solvents, oils, paints, and polyurethane mixes. Waste oils and solvents are recycled off site. Peeling paint was observed throughout the building. ACM pipe lagging was observed in the building during the 1995 VSI; asbestos abatement activities were conducted in 1996 (see Table 5-3). The public areas of the building were in generally good repair, with good housekeeping practices (AFA 1996d). During the 1995 VSI, a transformer was observed on a utility pole near the building.

- Building 236 is a small saltwater pumphouse. The building is currently unoccupied. Stained areas indicating past releases were observed during the 1995 VSI. A 250-gallon AST used to store diesel fuel was previously in this area. ACM and LBP may be present in the building.

IR-28 and IR-29 were investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil in Subparcel N-26.

5.1.3.14 Subparcel N-OS

This subparcel is located in both Parcels B and C. The Parcel C portion of this subparcel contains Buildings 218, 219, 224, 225, 226, and 229; Berths 1 through 5; an area operated by YYK for Navy SupShip; the former locations of USTs HPA-01, HPA-10, HPA-11, HPA-12, HPA-16, and HPA-17; exploratory excavation removal action site EE-08; and peripheral sections of site IR-28. With the

exception of Buildings 225 and 226, all of the buildings and UST locations are in site IR-28. The southern section of this subparcel contains several small sheds used to store various hazardous materials used in barge maintenance and repair by YYK and two electrical substations (Buildings 219 and 229). UST HPA-01 was associated with the former operations of Building 211; however, it is physically located in Subparcel N-OS. Likewise, USTs HPA-10 through HPA-12 and HPA-16 and HPA-17 were associated with the former operations of Building 231; however, they are physically located in this subparcel. Exploratory excavation removal action site EE-08 is located in IR-28 on the eastern side of Building 219; 151 yd^3 of soil was removed from this excavation site in 1997.

- Building 218 is a restroom facility. It has been vandalized. ACM was not observed during the 1995 VSI.

- Building 219 is electrical Substation E. An adjacent concrete pad contains a sump approximately 8 feet deep. Transformers associated with Building 219 that may contain PCBs were observed during the 1995 VSI.

- Building 224 is unoccupied and was formerly used by the Navy as a bomb shelter. Good general housekeeping was observed. An adjacent ventilation system structure may contain ACM siding. A portion of this building is in Subparcel N-OS.

- Building 225 is labeled Shop Service. Building 226 is a restroom facility. Buildings 225 and 226 are unoccupied, and are in poor condition. Asbestos abatement activities were conducted in these buildings in 1996 (see Table 5-3).

- The YYK area contains nine small buildings and sheds, barge berths, and electrical Substation L (Building 229). Electrical Substation L is currently in use. During the 1995 VSI, the building and sheds contained materials used in barge repair and maintenance operations such as compressed gases, paints, enamels, grouts, mortars, and cleaners. Active transformers at Substation L are labeled "no PCBs."

- Six USTs were removed or closed in place in this subparcel. UST HPA-01 was a 122-gallon tank used to store diesel fuel; this tank was removed in 1993. UST HPA-10 was a 6,500-gallon tank used to store fuel oil; this tank was removed in 1993. UST HPA-11 was a 1,600-gallon tank used to store diesel; this tank was removed in 1993. UST HPA-12 was a 750-gallon tank used to store diesel; this tank was closed in place in 1993. UST HPA-16 was a 7,200-gallon tank used to store water; this tank was closed in place in 1993. UST HPA-17 was a 1,700-gallon tank used to store diesel; this tank was removed in 1993. Further investigation associated with these USTs was conducted during the Parcel C RI.

IR-28 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). The remedy for Parcel C has not yet

been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are expected to be conducted for soil and groundwater in the Parcel C portion of subparcel N-OS.

5.1.3.15 Subparcel S-27(p)

This subparcel includes a large and diverse area, which overlaps Parcels C and D. The Parcel C portion of this subparcel contains Buildings 234 (labeled 238 on older maps), 300, 301, and 367; Dry Dock 4; Berths 6 through 11; exploratory excavation removal action sites EE-06 and EE-07; and site IR-57. IR-57 consists of Dry Dock 4 and the surrounding area. Three ASTs associated with ongoing ship maintenance operations were observed on the pier for Berths 6 through 9. Exploratory excavation removal action sites EE-06 and EE-07 are located in IR-57 on the south side of Dry Dock 4. Nineteen yd^3 of soil was removed from EE-06 and 391 yd^3 of soil was removed from EE-07 in 1997.

- Building 234 is a two-story building on the pier for Berths 6 through 9. It is in fair condition and contains toilet facilities and offices. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 300 is electrical Substation N. It contains stained areas indicating past releases, lead batteries, and transformers containing PCB at a concentration of less than 50 ppb. ACM and LBP may be present. Asbestos abatement activities were conducted in 1997 (see Table 5-3). It is currently operational and is leased to Astoria Metals.

- Building 301 is a latrine and contains showers and a locker room. No hazardous materials were found. It is currently used by Astoria Metals. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 367 was formerly the Ships Superintendent Office and is currently leased to Astoria Metals for use as a field office. Transformers with PCBs at a concentration of less than 50 ppb were observed in the building during the 1995 VSI. ACM and LBP may be present.

- Construction of Dry Dock 4 began in 1942 and was finished 10 months later. Dry Dock 4 is a concrete dry dock approximately 1,100 feet long and 120 feet wide carved into bedrock. Dry Dock 4 was used by the Navy for ship repair and is currently leased to Astoria Metals. An EBS and FOSL were prepared in support of this lease (MINS 1994b, 1994c). Astoria Metals uses Dry Dock 4 to dismantle ships. In 1998, the dry dock will be used to repair and sandblast a barge. All solid and liquid wastes generated by Astoria Metals at Dry Dock 4 are removed and disposed of off site by North State Environmental. Asbestos removed from ships is stored in bins on the south side of the dry dock prior to its disposal off site. Waste diesel and oils removed from the ships are stored in tanks on the north side of the dry dock prior to their disposal off site; during the 1997 tenant survey, these tanks were empty. During the 1997 tenant survey, two 1,150-gallon propane tanks were observed west of the dry dock.

Between the dry dock and Building 367, a flammable storage shed was observed during the VSI; this shed contained cement, motor oil, and lubricating grease.

IR-57 was investigated during the Parcel C RI; results are documented in the Parcel C RI report (PRC 1997c) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). The remedy for Parcel C has not yet been selected because the draft final Parcel C FS report is not complete; this report will be published in mid-1998. Based on information presented in the draft Parcel C FS report (PRC 1997a), remedial actions are not expected to be conducted in Subparcel S-27.

5.1.4 Parcel D

Parcel D contains 13 subparcel units, eight of which overlap (p) other parcels, as shown on Figure 1-3 and in Table 1-1. The IR sites in Parcel D are shown and described on Figures 5-1 and 5-5, in Table 5-1, and in Appendix G of this report.

5.1.4.1 Subparcel S-27

This subparcel includes a large and diverse area that is located in both Parcels C and D. The Parcel D portion of this subparcel contains Buildings 274, 306, 308, 311, 368, 369, 370, 372, and 376 through 385; the locations of demolished Buildings 313, 313A, 374, and 375; Berths 12 through 21; the Regunning Pier; the location of UST HPA-308, which is closed in place; and sites IR-22, IR-32, IR-35, and IR-68. UST HPA-308 was a 500-gallon gasoline tank associated with Building 308; this UST was closed in place in 1993.

IR-22 consists of closed-in-place UST HPA-308 and Buildings 308, 368, and 369. IR-32 consists of Buildings 370 and 383, and the western half of the Regunning Pier. IR-35 consists of Buildings 274, 306, and 372, and demolished Buildings 313 and 313A. IR-68 is on the Regunning Pier near Berths 17, 18, and 19, and consists of Buildings 376, 378, 379, and 382. Buildings 380, 383, and 385 are on the Regunning Pier but are not associated with an IR site; demolished Buildings 374 and 375 were also associated with the pier.

- Building 274 was the Midway Liaison Office. This building is currently unoccupied. Items of environmental concern were not observed in the building during the 1995 VSI.

- Building 306 is electrical Substation I, which is currently leased to Astoria Metals. It is a wood-frame building with asbestos siding. The building is in poor condition. Asbestos and transformers that may contain PCBs were observed in the building during the 1995 VSI.

- Building 308 was formerly a saltwater pumphouse. It is leased to Astoria Metals but is not currently in use. In 1995, a small pool of dark liquid was observed near the main pump in the building. In 1997, an old transformer was observed in the building. ASTs associated with the building were removed. UST HPA-308 is closed in place on the southeast side of the building.

- Building 311 was formerly the ships office and toilet facility for the pier, including Berth 12 and other ship berths. It is currently leased to Astoria Metals. Hazardous materials were not observed in this building during the 1997 tenant survey. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Buildings 313 and 313A have been demolished and only the foundations exist. These buildings comprised the former NRDL Annex G.

- Buildings 368 and 369 are adjacent abandoned shops in site IR-22. Both are in poor condition. Building 368 was the Pipefitting Shop Service building. Building 369 was the Rigging Shop Service building. A fenced area labeled "High Voltage" and an elevated concrete tank cradle were observed on the west side of Building 368 during the 1995 VSI. Asbestos abatement activities were conducted in Buildings 368 and 369 in 1996 and 1997, respectively (see Table 5-3).

- The Regunning Pier includes Buildings 370, 376, 378, 379, 380, 382, 383, 385, and Substation O. Demolished buildings 374 and 375 were huts used as control centers on the pier. This pier includes an inactive 450-ton crane, several smaller buildings, and trailers. Several transformers were observed throughout the pier during the 1995 VSI. Numbers visible on buildings were used during the VSI to identify buildings when possible. It was difficult to correlate each building on the pier with the maps, since some building numbers did not match and some buildings were unnumbered. A hazardous waste bin and two drums were observed near the northwest end of the Regunning Pier. Two unused ASTs are located at the southeast end of the Regunning Pier. The HPS BCP reports that they may have contained compressed air and water (PRC 1997b).

  - Substation O, associated with Building 311, contained three transformers during the 1995 VSI; one appeared to be leaking. Three additional transformers were observed at the end of the pier during the 1995 VSI.

  - Buildings 370 and 378 are toilet and shower facilities. These facilities are not currently in use and are in fair to poor condition. Building 370 contained ACM during the 1995 VSI; asbestos abatement activities were conducted in 1997 (see Table 5-3).

  - Building 376 was formerly used for storage. The building is currently unoccupied.

  - Building 377 was the Poseidon Systems Test Engineering facility. The building is currently unoccupied.

- Building 379 was formerly used as an instrumentation office. It is in good condition and contained one small transformer during the 1995 VSI.
- Building 380 was described in the BCP as the Poseidon Partial Full Test Machine (PRC 1997b). The building is not currently in use. Three smaller structures were associated with this building. One is a small wooden shed; the second is a garage containing a hydraulic pump system; the third is a concrete vault, partially below ground, containing three locked metal boxes.
- Building 382 was the Poseidon Arresting System Shelter and is currently vacant. This building was formerly used as a fire engine garage.
- Building 383 was formerly used as a shipping and receiving office. It is currently occupied by the EFA West Caretaker Site Office. The building is a two-story steel and concrete building in very good condition. Items of environmental concern were not observed in the building during the 1995 VSI.
- Building 385 is an unoccupied building. The building formerly contained welding equipment. Four structures are located near the building. A large cloth dome on a steel frame is located west of Building 385. Other structures observed during the 1995 VSI include a flammable locker labeled "Paint," an unoccupied trailer labeled "City Hall," and a plastic cylinder on a steel frame labeled "Explosive."

- Building 372 is a prefabricated decking shelter currently leased to Astoria Metals and used for storage.
- Building 381 was the West Coast Shock Test Facility. The building is leased to the SFRA and is subleased to Wedrell, Wilson, and Sons. At the time of 1997 tenant survey, the building was vacant.
- Building 384 was formerly used by the HPS Fire Department for equipment repair and supply storage. The building is currently unoccupied. It is in good condition and did not contain ACM during the 1995 VSI.

IR-22, IR-32, IR-35, and IR-68 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in the Parcel D portion of Subparcel S-27.

5.1.4.2 Subparcel S-28

This subparcel contains Buildings 302, 303, 304, 363, and 366; the former locations of USTs S-304 and S-305; exploratory excavation removal action site EE-12; and portions of sites IR-33 and IR-34. The portion of IR-33 in this subparcel contains Buildings 302, 303, and 304 as well as the former locations of

USTs S-304 and S-305. The portion of IR-34 in this subparcel contains Building 366. One AST, possibly a water reservoir, was formerly located by Building 363. USTs S-304 and S-305 were 7,000-gallon tanks used to store gasoline near Building 304; these USTs were removed in 1991. The area associated with these USTs was investigated further as part of the Parcel D RI. Five ASTs were observed near Building 302. According to the HPS BCP, the AST contents were probably waste oil or oil (PRC 1997b). Exploratory excavation removal action site EE-12 is located at the northeast corner of Building 302; 160 yd^3 of soil was removed from this excavation site in 1997.

- Building 302 is the Golden Gate Railroad Museum Shop and is used as a locomotive restoration area. During the 1997 tenant survey, a leaking 55-gallon drum of hydraulic oil was observed. Other hazardous materials observed in the building were acetylene, corrosion inhibitor, Safety-Kleen, and cutting oil. Four associated wooden sheds are used for storing machinery and parts. Hazardous materials, including oil, kerosene, and batteries are currently stored in the sheds. Wastes such as oily rags were also observed. A sign in the southwest corner of the building stated "Danger - Hot Lead." In 1995, ACM was observed in Building 302; asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 303 was used by the Navy for vehicle repair, sandblasting, and painting operations. The building is currently vacant. In 1995, the building contained a furnace, offices, a paint shop, hydraulic and gear oil lines, and two ASTs. Floor stains were observed in a welding room. Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 304 was a former service station and is currently vacant. An area west of the building was set up for a hydraulic lift with sumps. Small drums containing oily material were observed during the 1995 VSI. Tanks containing or formerly containing petroleum products were observed inside and outside the building during the 1995 VSI. The floor of Building 304 was stained and had a petroleum odor. In 1995, ACM was observed in the building; asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 363 is currently occupied by Quality Craftsman, Inc., and used as a woodworking shop. It was formerly used by the Navy as a woodworking shop. During the 1997 tenant survey, small quantities of hazardous materials, including lacquer, lubricating oil, paint thinner, and compressed gases, were observed. Housekeeping within the building was generally fair. In 1995, ACM was observed throughout the building; asbestos abatement activities were conducted in 1996 (see Table 5-3). Most of the area surrounding the building is asphalt-paved and in fair condition. No significant staining or chemical odors were noticed outside of this building (AFA 1996b). Nothing was stored outside of the building in 1997. During the 1995 VSI, three transformers were observed on utility poles near Building 363. Each was labeled as non-PCB containing.

- Building 366 was formerly used by the Navy as a boat and plastics shop. The building is currently leased to Christian Engineering and is used as a manufacturing shop. Building 364 is a wood and metal building currently containing small quantities of hazardous materials such as motor oil, hydraulic oil, cutting fluid, solvents, primers, and paints. Storage of hazardous materials by Christian Engineering was adequate; the materials were segregated by type and labeled. Flammable materials were stored in a separate area with a roll-up door at the rear of the building. In 1995, accessible friable ACM was observed on the thermal insulation, sheet flooring, and floor tiles; asbestos abatement activities were conducted in 1996 (see Table 5-3). The area surrounding Building 366 is paved with asphalt and is in good condition. No stains, chemical odors, or distressed vegetation were noted outside this building (AFA 1996b). During the 1995 VSI, three transformers were observed in or near Building 366. Each transformer was labeled as non-PCB containing.

IR-33 and IR-34 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in Subparcel S-28.

5.1.4.3 Subparcel S-29

This subparcel contains Buildings 402, 417, 418, 419, 420, 421, and 424; the former locations of demolished Buildings 422 and 423; site IR-09; and a portion of site IR-33. Transformers were observed on this subparcel during the 1995 VSI. Some contained no PCBs, while others contained PCBs at varying concentrations. Concentrations, when indicated at all, were indicated by labels stating that the transformer had been tested and contained oils with less than 1 ppm PCB, less than 50 ppm PCB, or non-PCB oils. IR-09 is the Pickling and Plate Yard (PPY), which underwent a removal action between November 1994 and January 1996. Buildings 422 and 423 were demolished as part of the removal action. The removal action included dismantling and removing plate storage and drying racks, steel pickling tanks, and an overhead crane structure. In addition, vegetation with primer residue was removed. The portion of IR-33 in this subparcel contains Buildings 417, 418, 419, 420, 421, and 424.

- Building 402 was formerly used by the Navy as a storehouse and for office space. The building is currently vacant and is expected to be leased to WRT, a solid waste material recycling company. During the 1997 tenant survey, the building was empty except for a hydraulic oil tank in a small room on the first floor. The ACM observed in 1995 was in good condition. The outside area is paved with asphalt and in generally good condition. A locked fence with an old sticker "Caution-Contains PCBs" was observed outside the building on the southeastern corner. Inside the fence, a transformer with a new label indicating PCBs at a concentration of less the 50 ppm was observed during the 1995 VSI. Minor oil staining was observed outside this building (AFA 1996b).

- Building 417 is leased to Hydro-Chemical Services, Inc. (Hydro-Chem) and is used as a small work area for a liquid waste transport facility. It was formerly used by the Navy as an acetylene manifolding facility. The only stored item observed during the 1997 tenant survey was a 55-gallon drum used for oily rags. The area surrounding the building is paved with asphalt and in generally good condition. No stains, chemical odors, or distressed vegetation were noted near the leased area (AFA 1996b).

- Building 418 is currently leased to Hydro-Chem and is used as office space. It was formerly used by the Navy as a quality and reliability assurance (Q&RA) welding engineering facility. The building contains offices and a shop area that contained small quantities of diesel and lubricating oils. Housekeeping practices are good. The area surrounding the lease area is paved with asphalt in fair condition. A metal storage locker observed outside the western side of the building contained paint and lubricating oils. In the yard area, a 25-gallon waste oil drum was observed. The asphalt had many depressions indicating former support locations for storage of racks or equipment. No chemical odors or distressed vegetation were noted near the leased area (AFA 1996b). Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 419 was formerly used by San Francisco Bay Public Works Center (SFBPWC) for storage and as a maintenance and repair shop for the PPY remediation effort. The building was vacant during the 1997 tenant survey. Prior to that use, it was the Oxygen Converter Building. The building has asbestos siding.

- Building 420 was formerly used as a carpenters shop for the PPY remediation effort. Prior to that use, it was the Oxygen Cylinder Charging Building.

- Building 421 was formerly a small storage building for the PPY remediation effort. Prior to that use, it was the Oxygen Control Shop. In 1995, the yard adjacent to this building contained empty drums, drums containing residual sealant materials, and drums containing contaminated soil from an off-site Navy facility (HEE 1995c). Asbestos was observed in the area in 1995.

- Building 424 is currently leased to Hydro-Chem and is used as a transport worker break room and storage area. It was formerly used by the Navy as a time house. Housekeeping is fair. Stored items observed in 1997 were clothes and mattresses. The area surrounding the building is paved with asphalt in fair condition. Some limited cracking was observed. No stains, chemical odors, or distressed vegetation were noted near the leased area (AFA 1996b).

IR-09 and IR-33 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. The PPY removal action results are documented in the completion report (HLA 1996b). As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in Subparcel S-29.

5.1.4.4 Subparcel S-30

This subparcel is located in both Parcels D and E. The Parcel D portion of this subparcel contains Buildings 401, 404, 435, 436, and 437; the former locations of USTs S-435(1) and S-435(2); exploratory excavation removal action site EE-14; site IR-37; and a small portion of site IR-66. A portion of Building 404 is also in the Parcel E portion of this subparcel. USTs S-435(1) and S-435(2) were 750-gallon tanks used to store solvents near Building 435; the USTs were removed in 1991. The area around these USTs was investigated further during the Parcel D RI. IR-37 consists of Buildings 401, 435, 436, and 437, as well as the former UST locations. Exploratory excavation removal action site EE-14 is located between Buildings 436 and 437; 36 yd^3 of soil was removed from this excavation site in 1997.

- Building 401 was formerly the Navy's Public Works Shop. It is currently leased to West Edge Design (architectural metals), Di Paolo and Barbar (artisans), James Heagy (storage), and Patricia Powers (artisan). Housekeeping varies from poor to good. Hazardous materials observed inside the building during the 1997 tenant survey include solvents, lacquer, paint, lubricating oil, and cylinders of compressed gas. The area outside the building is paved with asphalt and in good condition. The building exterior is covered with transite sheeting on the east and west sides. The area north of Building 401 contained two former concrete loading docks adjacent to railroad tracks. Stored items observed next to the loading docks during the 1995 VSI included two dumpsters, two cargo containers (35 feet long), stored office furniture, several old computers and monitors, several unlabeled transformers with fill caps removed, and two locked trailers. No staining, chemical odor, or distressed vegetation were noted (AFA 1996b). During the 1995 VSI, a baghouse was observed at the southwest corner of the building. Asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Building 404 is occupied by Mina Metal Corporation, manufacturers of sheetmetal vents and ducts. This building was formerly used by the Navy as a storehouse. Various pieces of metal-working machinery were observed and appeared to be in generally good condition, although some minor oil leakage was noted. The public areas of the building were in generally good repair with moderately good housekeeping practices. New 5-gallon cans of duct sealing and duct adhesive were stored on racks. Two metal lockers for storage of paints and machine oil were located near the west end of the building. Two 55-gallon drums of machine oil were observed. No waste is generated on site that requires disposal. The building is surrounded by asphalt pavement in generally good condition. Peeling paint was observed on various building sides. Minor oil staining was noted on the pavement outside the northeast corner of the building. No chemical odors or distressed vegetation were noted (AFA 1996b). Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 435 contains a series of small shops leased to J. Terzian and subleased to West Edge Design. The building is used as a material storage area, primarily metal for design work. A painting booth contained paints and thinners. The exterior of the building is paved with asphalt in fair condition. Compressed gas cylinders are stored against the building. The south side of the building had some small holes and cracks and is used to store wood, metal, and ceramics. A storm drain that apparently backs up during periods of water runoff was observed. In 1995, a five-yd^3 pea gravel pile was observed approximately 20 feet east of Building 435, where a former UST was located (AFA 1996b).

- Building 436 was formerly a warehouse containing wooden racks for pipe storage and is currently vacant. In 1995, Building 436 contained pools of oily liquid near a drum of transmission fluid. On the south side of Building 436, a paint storage area was observed with many open paint cans outside the south entrances.

- Building 437 was formerly a pipe storage building. The building is currently vacant. During the 1995 VSI, spills and stained areas were observed outside this building. Housekeeping is poor.

IR-37 and IR-66 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the draft Parcel D ROD (TtEMI 1997c), no remedial actions are required in the Parcel D portion of Subparcel S-30.

5.1.4.5 Subparcel S-31

This subparcel is located in both Parcels D and E. The Parcel D portion of this subparcel is vacant and does not contain any buildings or IRP sites.

5.1.4.6 Subparcel S-37

This subparcel is partially in Parcel D and partially in Parcel E. The Parcel D portion of this subparcel contains Buildings 407 and 439 and sites IR-66 and IR-67. Building 407 is in site IR-66 and Building 439 is in site IR-67. Two USTs were observed adjacent to Building 439. These tanks were installed, tested, and never used (HEE 1995b).

- Building 407 is occupied by American Van Lines and is used as a moving and storage facility. During the 1997 tenant survey, the building contained mainly offices and some temporarily stored furniture. Three 25-pound propane cylinders used to run the forklifts were observed. No other hazardous substances were observed. Materials stored in 1995 included linseed oil, wax, and metal cleaner. Housekeeping is very good. The outside lease area is paved with asphalt and is in good condition. Peeling paint was observed on the exterior of the building, particularly on the western side. No stains, chemical odors, or distressed vegetation were noted near the leased area (AFA 1996b). Asbestos abatement activities were conducted in 1997 (see Table 5-3).

- Building 439 is a large empty building containing warehouse and office areas. The building was constructed and not used, except for a short occupancy by a toy company (HEE 1995d). It is not currently leased. The building contains five acid and alkaline dip tanks and two painting booths. The dip tanks appeared clean. A room labeled "Sand Blasting Room" appeared to be clean. On top of the sandblasting room, three large electrical transformers labeled as not containing PCBs were observed during the 1995 VSI. According to the Navy, the equipment observed inside the building has never been used. The surrounding outside area is paved with asphalt and is in good condition. No stains, chemical odors, or distressed vegetation were noted near the building (AFA 1996b).

IR-66 and IR-67 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), no remedial actions are required for soil in the Parcel D portion of Subparcel S-37.

5.1.4.7 Subparcel S-38

This subparcel contains Buildings 408, 409, 411, and 438; the location of demolished Building 410; site IR-44; and a portion of site IR-33. During the 1995 VSI, the subparcel contained small sheds, an abandoned incinerator, a warehouse, and a large, open Butler-type building. During the 1995 VSI, open space in Subparcel S-38 was used to store scrap metal and other metal items to be sold or recycled. Some of the scrap metal items observed were presumed to be former ASTs. Two of the scrapped ASTs were labeled "diesel." IR-33 consists of Building 411. IR-44 consists of Buildings 408, 409, 438, and demolished Building 410.

- Building 408 was formerly the furnace shelter and is currently unoccupied. The furnace was disabled by removal of the oven door and some of the refractory brick. The building siding may contain asbestos. Some stains and soil piles were observed around the exterior of Building 408 in 1995.

- Buildings 409 and 410 comprised the Welder Motor Generator Shop. Building 409 is currently unoccupied and Building 410 has been demolished. The floor of Building 409 is stained, and a pile of sand inside the building is also stained. An empty AST was observed north of Building 409 in 1995.

- Building 411 is occupied by three tenants: Sierra Western Equipment (heavy equipment storage and refurbishment, occupies the main warehouse and southeast storerooms); Eric Landsdown (dollhouse manufacturer, occupies the northeastern corner of the main warehouse and an adjacent first floor office); and Christian Engineering (occupies offices in the second floor on the northeast corner). Astoria Metals subleases a portion of the warehouse. It was formerly used by the Navy as a shipfitting, boilermaking, and welding and burning shop. The main warehouse contains stored industrial equipment including water hoses, pumps, diesel, engines, forklifts, small tractors, and various Navy surplus. During the 1997 tenant survey, paints and paint thinners were observed stored in a fire-safe cabinet in the Sierra lease area; hydraulic oil and motor oil were also observed. Epoxy, paint, paint thinner, lacquer, solvents, and lubricants were observed in the Landsdown area in 1997. Approximately 10 large unfenced sumps were observed within the central area of the warehouse. Sump contents in 1995 included water, oil, plastic sheeting, engine blocks, pipe, and assorted debris. Sump integrity is unknown. In 1995, asbestos was observed throughout the inside of Building 411. Asbestos abatement activities were conducted in 1995 and 1996 (see Table 5-3). Housekeeping practices were generally good. Severe paint peeling was observed in the entrance to the former cafeteria. Building 411 is surrounded by asphalt pavement in good condition. Minor oil staining was noted in 1995. On the southeast concern was a locked door marked "electrical Substation Y" that formerly contained PCB-containing transformers. Materials stored on the outside of this building in 1995 included propane tanks, mobile diesel storage tanks, tarpaulins, electrical equipment, metal slag, acetylene and oxygen gas cylinders, and scrap metal. AFA observed during its 1995 visit that a steel metal submarine was being scrapped in this area. A 500-gallon diesel AST is in operation outside the building. The tank was in good condition during the 1997 tenant survey. No chemical odors or distressed vegetation were noted near the leased area (AFA 1995b).

- Building 438 was the Metal Spray Shelter used to house equipment to heat and then spray metal parts with a metal coating. It is a small building at the corner of Manseau and Hussey Streets. Compressed gas cylinder supports and a sand pile were observed in the building in 1995.

IR-33 and IR-44 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in Subparcel S-38.

5.1.4.8 Subparcel S-39

This subparcel includes Buildings 323, 324, 351, 351A, 364, 365, 415, and 416; a portion of sites IR-33 and IR-34; and sites IR-65 and IR-71. The small portion of IR-33 in this subparcel consists of

Building 364. IR-34 consists of Buildings 351 and 351A. IR-65 consists of Building 324. IR-71 consists of an open yard. During the 1995 VSI, two transformers on utility poles were observed in this subparcel.

- Building 323 was formerly used by the Navy as an electronics building until 1974. Building 323 is currently leased to J. Terzian and subleased to two artisans (woodwork and metal sculpting studios). Materials observed during the 1997 tenant survey in this building include oxygen and acetylene tanks, solvents, and paint. Housekeeping is good. The majority of the area surrounding Building 323 is paved and in good condition. Peeling paint was observed on some areas of the building exterior in 1995. A shed outside the building contained cylinders of propane, acetylene, and compressed gases. No significant staining or chemical odors were noticed outside this building.

- Building 324 was formerly a carbon dioxide filling station and is currently unoccupied. In 1995, the building contained a flammable cabinet and unlabeled compressed gas cylinders. Six large pieces of equipment labeled "AAA Shipyard" were observed outside Building 324. Asbestos was observed on piping in Building 324; abatement activities were conducted in 1995 (see Table 5-3). Building 324 contained an abandoned carbon dioxide tank and an abandoned chlorine solution tank in 1995. Two small tank-like containers (each less than 55 gallons) were observed outside Building 324.

- Building 351 is a four-story concrete building, formerly used as an electronics shop, but in 1994 the top floor was removed. This building is currently vacant. The electronics shop was used for maintenance, including cleaning and painting, of electronic equipment. In 1988, an electrical transformer (not containing PCBs) was observed in the building. In 1995, electrical equipment, tanks, and kilns with asbestos insulation were observed throughout the building. Wood block floors were warped, buckled, and stained in several areas. The wood block floor on the ground floor was extensively stained. Pools of dark liquid were observed on the ground floor. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 351A was not inspected in 1995 because of ongoing asbestos abatement (see Table 5-3). Building 351A is a multistory concrete building formerly used by the NRDL. The building is currently vacant.

- Building 364 is occupied by a tenant (Young Laboratories) that performs metal analyses. This building was formerly used for radiological and chemical research by the NRDL. Materials observed in the building during the 1997 tenant survey included bases, acids, solvents, hydrogen peroxide, paints, potassium nitrate, potassium cyanide, and borax. Propane gas is used as furnace fuel. The surrounding outside area is paved. Four propane cylinders were chained outside the building on the west side in 1995. Building 351A shares a common wall to the north. A fenced area is located to the south of Building 364 with a sign reading "Caution, Radiation Hazard." No staining, chemical odors, or distressed vegetation were noticed outside Building 364 (AFA 1996b). Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 365 is a wood building with tile siding. The building was formerly used as office space and is currently unoccupied. It is in good condition, although an adjacent metal shed is in poor condition. Items of environmental concern were not observed in the building during the 1995 VSI, other than small stained areas and piles of dirt and wood. Asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Buildings 415 and 416 are interconnected. These buildings were formerly the Ship Forges Storehouse. The buildings are currently empty. Dark stains were observed on the interior floor in 1995. Asbestos was not observed.

- IR-71 is a 1-acre open yard in the southern part of the subparcel between Cochrane and Moreell Streets. This area was formerly used as a scrap metal and discarded equipment laydown area. Three large mobile cranes on rails were stored in this area during the 1995 VSI. Equipment in the cranes may contain PCBs. Abandoned equipment, tanks, metal parts, and buildings were also observed in 1995. Three metal sheds in the area contained electrical equipment and dismantled crane motors.

IR-33, IR-34, IR-65, and IR-71 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), no remedial actions are required in Subparcel S-39.

5.1.4.9 Subparcel S-40

This subparcel is located in both Parcels D and E. The Parcel D portion of Subparcel S-40 contains Buildings 500 and 505; the former location of UST S-508; and portions of sites IR-38 and IR-39. The portion of IR-38 in this subparcel contains Building 500 and the former location of UST S-508. The portion of IR-39 in this subparcel contains Building 505. IR-38 and IR-39 extend into Subparcel S-41. UST S-508 was a 750-gallon tank used to store fuel oil; this UST was removed in 1991. Further investigation was conducted during the RI.

- Building 500 is a wooden building formerly used as the Non-Commissioned Officers Quarters. The building is in poor condition and is unoccupied. Asbestos was observed as insulation; abatement activities were conducted on an unspecified date (see Table 5-3). During the 1995 VSI, one transformer was observed on a utility pole on Main Street adjacent to Building 500; it appeared rusted and corroded. One AST was formerly located near this building.

- Building 505 is a wooden building formerly used as the Navy Exchange. The building is in poor condition and is unoccupied. Large batteries labeled "2400 Volts" were observed on the second floor in 1995. Asbestos was observed throughout this building; abatement activities were conducted on an unspecified date (see Table 5-3).

IR-38 and IR-39 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), no remedial actions are required in the Parcel D portion of Subparcel S-40.

5.1.4.10 Subparcel S-41

This subparcel is located in both Parcels D and E. The Parcel D portion of Subparcel S-41 contains most of Building 606; the former locations of demolished Buildings 501, 502, and 503; and small portions of sites IR-08, IR-38, and IR-39.

- Buildings 501 and 502 were used as barracks. These buildings have been demolished.

- Demolished Building 503 was the Base Laundry Facility from 1948 to 1974. Two oily grease traps related to the laundry facility were located south and west of demolished Building 503; these traps were likely removed during the construction of Building 606. A 21,000-gallon AST used to store fuel oil was also associated with the building and was removed prior to demolition of Building 503.

- Building 606 was constructed in 1989 and was not used except as a post office in 1991 during Operation Desert Storm. Building 606 is currently leased to the SFPD, which has occupied the building since February 1997 and was included in the 1997 tenant survey. The north end of the building is used for office space. Several vacant rooms in this area are planned for use as a crime laboratory. Most of the building is used for storage. The main area of the building contains police vehicles, motorcycles, two small helicopters, and a boat; a cylinder of acetylene was stored in this area. Fueling and maintenance of most of the vehicles is conducted off site; however, motorcycle maintenance is conducted in the building. Two 55-gallon drums of waste motor oil and one 55-gallon drum of new motor oil were observed on a pallet in the motorcycle maintenance work area. Metal storage lockers in this area contained small quantities of lubricants and antifreeze. Two 1-liter bottles of solvents were observed in a weapons cleaning deck in the western portion of the building; a safe with small quantities of ammunition was also observed in this area. No materials or equipment were stored outside the building. Building 606 was surveyed for asbestos in 1993; no ACM was observed.

IR-08, IR-38, and IR-39 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), no remedial actions are required in the Parcel D portion of Subparcel S-41.

5.1.4.11 Subparcel S-42

This subparcel is located in both Parcels D and E. The Parcel D portion of Subparcel S-42 contains a portion of Building 606, the former location of demolished Building 508, and sites IR-08 and IR-48. The portion of IR-08 that is in this subparcel consists of an area of PCB contamination found during the construction of Building 606 in the vicinity of what is now the southeast corner of the building. The likely source for PCBs at the site was determined to be electrical transformers stored at the site. The transformers were removed from the site in 1988. Following removal of the transformers, an interim removal action was conducted by the Navy. During the removal action, approximately 1,255 yd^3 of soil was removed and disposed of off site. IR-48 is a paved vacant area in the northeast corner of the subparcel.

- Demolished Building 508 was the NRDL health physics office. The building was cleared by the AEC in 1969. Residual radioactive contamination was not detected in surface soil at the former building location during the 1997 Phase III radiation investigation.

- Building 606 was constructed in 1989 and is currently leased to the SFPD. The results of the 1997 tenant survey are discussed in Section 5.1.4.10 because this building is located mainly in Subparcel S-41.

IR-08 and IR-48 were investigation during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in the Parcel D portion of Subparcel S-42.

5.1.4.12 Subparcel S-43

This subparcel contains Buildings 307 and S-308, exploratory excavation removal action site EE-17, a small portion of site IR-32, and sites IR-55 and IR-70. IR-55 consists of Building 307. IR-70 consists of Building S-308 and the surrounding area. IR-70 also contains exploratory excavation site EE-17; 94 yd^3 of soil was removed from EE-17 in 1997.

- Building 307 was formerly used by the Navy as a machine shop. The building was later leased to Triple A. Building 307 is currently leased to the SFRA and subleased to Wedrell, Wilson and Sons, a general contractor. The building was vacant during the 1997 tenant survey but is planned to be used as a workshop and storage area for tools and equipment.

- Building S-308 is a shed that previously housed sandblasting operations. The building is currently unoccupied.

IR-32, IR-55, and IR-70 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in Subparcel S-43.

5.1.4.13 Subparcel S-OS

Subparcel S-OS is located in both Parcels D and E. The Parcel D portion of this subparcel contains Buildings 523, 525, 526, and 530; Berths 22 through 29; exploratory excavation removal action site EE-15/16; and sites IR-16, IR-17, SI-53, and IR-69. Subparcel S-OS is an area largely created with Artificial Fill materials. A small developed area is in the southeast portion of the subparcel. The southern end of the subparcel also contains piers and berths that are no longer in use. IR-16 is a paved area used by Triple A to store drums, electrical, transformers, and flammable materials. IR-17 is an area used by the Navy as a storage facility; this area was also used by Triple A to store drums and dispose of industrial debris. IR-53 consists of Buildings 525 and 530. IR-53 also contains exploratory excavation site EE-15/16; 65 yd^3 of soil was removed from this excavation site in 1997. IR-69 consists of Building 523 and an adjacent metal shed.

- Building 523 was formerly a pumphouse used by the Navy to pump saltwater to the HPS fire hydrant system. This building is currently unoccupied. The metal shed adjacent to Building 523 was used by the Navy as a storage area for flammable materials. During the 1995 VSI, this shed contained two 5-gallon drums with oil, and the floor was badly stained. One stain was observed both inside and outside the north wall of the shed. An electrical transformer was removed from Building 523.

- Buildings 525, 526, and 530 are located together in the same area and are corrugated metal buildings in fair condition. Building 525 was formerly a storehouse for adhesives, paint emulsion, and other materials. Building 526 was formerly a storehouse and office space. Building 530 was used by the Navy as an automotive hobby shop. These buildings are currently unoccupied. During the 1995 VSI, the floor in Building 525 was stained and, based on observed signs, may have been used as a storage area. A transformer labeled as containing less than 50 ppm PCBs was observed in 1995 near Building 526. Low voltage PCB-containing equipment was observed in Building 530 in 1996 (see Table 5-4B). Asbestos abatement was completed in Buildings 526 and 530 in 1997 (see Table 5-3).

IR-16, IR-17, IR-53, and IR-69 were investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. The exploratory excavation removal action results are documented in the completion report (IT 1997a). As documented in

the draft Parcel D ROD (TtEMI 1997c), remedial actions are required for soil in the Parcel D portion of Subparcel S-OS.

5.1.5 Parcel E

Parcel E contains 15 subparcel units, eight of which overlap (p) other parcels, as shown on Figure 1-3 and in Table 1-1. The IR sites contained in Parcel E are shown and described on Figures 5-1 and 5-6, in Table 5-1, and in Appendix G of this report.

5.1.5.1 Subparcel S-30

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of a small portion of Building 404 and site IR-36, which is mainly in Subparcel S-31. IR-36 was investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. Subsequent to the RI, site IR-36 was relocated to Parcel E and was evaluated in the draft Parcel E FS report (TtEMI 1998b). The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report, remedial actions are not expected to be conducted in the Parcel E portion of Subparcel S-30.

5.1.5.2 Subparcel S-31

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of Buildings 400 and 405, which are in the northern portion of site IR-36.

- Building 400 was used by the Navy to store decommissioned ship parts and other equipment. The building is currently unoccupied. During the 1995 VSI, the building contained two containers of oil and grease, and asbestos was observed in the building. In addition, four transformers were observed at the southeast corner of the building; these transformers were labeled as containing less than 50 ppm PCBs. Asbestos abatement activities were conducted on an unspecified date (see Table 5-3).

- Building 405 was used by the Navy to store solvents, oil, fuels, formaldehyde, and chlorine. The building is currently leased to Clean Comp and is used for equipment storage. During the 1997 tenant survey, 25 to 30 empty propane cylinders and one full propane cylinder were observed in the building. Oil stains were observed on the floor in a small work area. A metal locker contained used paint cans and a partially empty 5-gallon container of hydraulic oil. About 12 gallons of diesel fuel was stored in several containers on a plastic cart. No materials or equipment were stored outside the building in 1997. The outside area is paved with asphalt and in good condition. No stains, chemical odors, or distressed vegetation were noted near the building.

IR-36 was investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. Subsequent to the RI, site IR-36 was relocated to Parcel E and was evaluated in the draft Parcel E FS report (TtEMI 1998b). The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report, remedial actions are not expected to be conducted in the Parcel E portion of Subparcel S-31.

5.1.5.3 Subparcel S-32

This subparcel contains Buildings 710, demolished Building 702, a portion of sites IR-12 and IR-36, and site IR-05. IR-05 is an old transformer storage yard used to store electrical capacitors and lead and copper from submarine batteries. The portion of IR-12 in this subparcel consists of the location of demolished Building 702, which was used by National Broadcasting Company (NBC) for offices and storage and was subsequently destroyed by fire. The portion of IR-12 in this subparcel is a paved area used as a salvage yard by the Navy and Triple A; surplus materials and scrap metal were stored in this area. The portion of IR-36 in this subparcel consists of Building 710, which is an unoccupied restroom facility. During the 1995 VSI, materials observed in this subparcel were waste piles of debris, concrete barriers, steel racks, telephone poles, and 55-gallon drums filled with dirt.

IR-05 and IR-12 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. IR-36 was investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. Subsequent to the RI, site IR-36 was relocated to Parcel E and was evaluated in the draft Parcel E FS report (TtEMI 1998b). The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report, remedial actions are expected to be conducted for soil in Subparcel S-32.

5.1.5.4 Subparcel S-33

This subparcel contains a small portion of site IR-05 and most of site IR-12. No buildings are in this subparcel, which contains mainly roadway, open space, and rubble. IR-05 was a former transformer storage yard. IR-12 was a salvage yard and disposal trench area.

IR-05 and IR-12 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil in Subparcel S-33.

5.1.5.5 Subparcel S-34

This subparcel contains small portions of sites IR-01/21, IR-02, and IR-12. No buildings are in this subparcel, which contains mainly roadway, open space, and rubble.

IR-01/21, IR-02, and IR-12 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil in Subparcel S-34.

5.1.5.6 Subparcel S-35

This subparcel contains Buildings 371, 704, 707, 708, and 709; demolished Buildings 524 and 803; the former locations of USTs HPA-14, HPA-15, and S-711 through S-715; portions of sites IR-02 and IR-36; and sites IR-13 and IR-39. The portion of IR-02 in this subparcel is an undeveloped area comprised mainly of Artificial Fill materials. The western portion of IR-36 is in this subparcel and consists of Buildings 371, 704, 709; in addition, this site contains the seven former UST locations. IR-13 consists of demolished Buildings 524 and 803, which were used as the Navy commissary and commissary storehouse. IR-39 consists of Buildings 707 and 708.

- Building 371 was used by the Navy as a storehouse for miscellaneous equipment. Currently, the building is leased to S&W Production and is used for automobile and automotive parts storage. During the 1997 tenant survey, the floor space was completely covered with old automobiles and used auto parts. A 55-gallon drum of waste oil was observed. A metal cabinet in the rear of the building contained rusted cans of reducer, paint, coatings, and sealer. Outside the front of the building, old automobiles and some used parts and trash were observed. During the 1997 tenant survey, it was reported that in 1996 an open 55-gallon drum of oil was on a truck trailer parked outside the building. The drum subsequently filled with rainwater, causing overflow to the ground. The Navy reportedly notified the lessee of the problem; however, the truck did not belong to S&W Production. The truck was eventually removed by an unknown person. It is not known if the spill was removed.

- Building 704 has been leased to Wagner Construction Company (Wagner) since February 1983 and is used as a maintenance shop for construction vehicles. The building was formerly used by the Navy as an automotive repair shop. During the 1997 tenant survey, four 55-gallon drums of waste oil were observed in secondary containment in the northeast corner of the building; Wagner generates approximately 300 gallons of waste oil per year. Several small containers of gear oil and grease were also observed in this area. The northwest corner of the building was used for diesel and motor oil storage. During the 1997 tenant survey, 10 5-gallon cans of diesel, 15 5-gallon containers of motor oil, and two 5-gallon cans of curing compounds were observed in this area. A storage locker in this area contained paint thinner, hydraulic oil, and lubricants. The southwest corner of the building contained a 55-gallon drum of muriatic acid and a few old batteries. The southeast corner of the building contained a parts washer containing Safety Kleen. Oil stains were observed throughout the interior of Building 704 during the 1997 tenant survey. The area around Building 704 is generally unpaved although some asphalt-paved areas are present near the building. Fuel trucks are generally present in the outside area, according to Wagner; however, none were observed during the 1997 tenant survey. A 10,000-gallon AST was previously on the site but was removed by the Navy in 1996.

- Building 707 was formerly used by the NRDL to conduct animal research. The building was cleared by the AEC in 1970. Building 707 was previously leased to Pet Express for use as an animal clinic but is currently vacant. During the 1995 VSI, hazardous materials such as paint and adhesives were observed in one room of the building. Adjacent structures include fenced kennels and a concrete pad with curbs. The NRDL reportedly used this concrete pad to store drums of radioactive waste prior to their shipment to an off-site disposal facility. Asbestos abatement activities were conducted in 1996 (see Table 5-3)

- Building 708 is a Quonset hut formerly used by the NRDL as a biomedical facility. The building is currently unoccupied. Radioactive materials were never used or stored in the building. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

- Building 709 and the surrounding area is a former gasoline station. The building is currently unoccupied. During the 1995 VSI, no asbestos was observed in this building. Three gasoline dispensers were stored in a small room. Seven USTs were associated with the former gas station and contained gasoline, diesel, oil, and hydraulic fluid. USTs S-711 through S-715 were removed in 1991. USTs HPA-14 and HPA-15 were removed in 1993. This area was investigated further during the RI at IR-36. Asbestos abatement activities were conducted in 1996 (see Table 5-3).

IR-02, IR-13, and IR-39 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. IR-36 was investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. Subsequent to the RI, site IR-36 was relocated to Parcel E and was evaluated in the draft Parcel E FS report (TtEMI 1998b). The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil and groundwater in Subparcel S-35.

5.1.5.7 Subparcel S-36

This subparcel consists of Buildings 406, 413, and 414. This entire subparcel is within site IR-36.

- Building 406 was formerly used as a Navy supply storehouse and contained equipment for preservation and packaging operations. The building is currently leased to B&A Bodyworks and Towing (B&A) and used as an automobile repair garage. According to Navy records, degreasing operations were conducted in the northwest portion of Building 406; solvents, acids, neutralizer, and other hazardous materials were used during degreasing operations. B&A occupies the southeast half of the building, which includes two enclosed spray painting booths, a paint-mixing room, and an office. During the 1997 tenant survey, a 16-gallon drum of waste oil was observed in a work area near the side doors; about 5 gallons of waste oil per month is generated. A 55-gallon drum of motor oil, three 16-gallon drums of gear lubrication, and two acetylene cylinders were also observed; one of the gear lubrication drums was leaking onto the floor. Two yellow cabinets contained paint, paint thinner, lacquer thinner, grease, and brake cleaner. The outside area is used to store wrecked automobiles. The area surrounding Building 406 is paved with asphalt and is in good condition. Peeling paint was observed on the exterior of the building during the 1995 VSI. No chemicals odors, stains, or distressed vegetation were noted in the vicinity of the building. Asbestos abatement activities were conducted in this building on an unspecified date (see Table 5-3).

- Building 413 was formerly a Navy supply storehouse. The building is currently leased to American Van Lines and is used for moving and furniture storage. During a 1988 survey, waste oil drums were observed inside this building. Hazardous materials were not observed inside the building in 1995. During the 1997 tenant survey, 5 to 10 gallons of latex paint and three propane cylinders were observed. In 1995, two pieces of electrical equipment with labels indicating that contents contained concentrations of PCBs less than 50 ppm were observed. Asbestos abatement activities were conducted in this building in 1995 (see Table 5-3).

- Building 414 was formerly used by the Navy as a Public Works facility and furniture storehouse. The building is currently unoccupied. During the 1995 VSI, three non-PCB-containing transformers were observed. Asbestos abatement activities were conducted in this building in 1995 (see Table 5-3).

IR-36 was investigated during the Parcel D RI; results are documented in the Parcel D RI report (PRC 1996e) and are summarized in Appendix G of this report. Subsequent to the RI, site IR-36 was relocated to Parcel E and was evaluated in the draft Parcel E FS report (TtEMI 1998b). The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report, remedial actions are expected to be conducted for soil in Subparcel S-36.

5.1.5.8 Subparcel S-37

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of the western portion of "H" Street along the IR-36 site boundary. There are no buildings or IR sites present in the Parcel E portion of Subparcel S-37.

5.1.5.9 Subparcel S-40

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of small portions of sites IR-13 and IR-14. No buildings are present in the Parcel E portion of this subparcel. IR-13 and IR-14 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are not expected to be conducted in the Parcel E portion of Subparcel S-40.

5.1.5.10 Subparcel S-41

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of the former locations of demolished Buildings 506, 507, and 529. The Parcel E portion of this subparcel also contains small portions of sites IR-14 and IR-38. IR-14 consists of demolished Buildings 506 and 529; IR-38 consists of demolished Building 507. Buildings 506 and 507 were used by the NRDL as laboratory space. Building 529 was used by the NRDL for radioisotope storage and housed the Cockcroft-Walton generator. These buildings were cleared by the AEC between December 1969 and January 1970; additionally, the buildings were surveyed in 1997 during the Phase III radiation investigation. A small area of elevated radioactivity was detected near the former location of Building 529. This apparent buried point source will be excavated.

IR-14 and IR-38 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil in the Parcel E portion of Subparcel S-41.

5.1.5.11 Subparcel S-42

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of the former locations of demolished Buildings 512 and 517 and part of site IR-38. Building 512 was a school and Building 517 was used by the NRDL as a biomedical facility and is part of IR-38. IR-38 was investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are not expected to be conducted in the Parcel E portion of Subparcel S-42.

5.1.5.12 Subparcel S-44

This subparcel contains Building 521; demolished Buildings 509, 510, 510A, 511, 511A, 513, 514, 515, 516, 518, and 520; the former location of AST S-505; and exploratory excavation removal action site EE-18. This subparcel also contains portions of sites IR-02, IR-14, and IR-38, and all of sites IR-11, IR-15, and IR-54. Buildings 513 through 516 are not associated with an IR site; they were formerly used as barracks and military services offices. In 1995, one transformer on a utility pole was observed in this subparcel. In addition, three transformers were observed in the fenced area near the location of demolished Building 520 in 1995. A transformer was also observed near the corner of Mahan and "H" Streets and on Mahan and Hussey Streets.

IR-02 is an area created when the Bay margin was filled with quarried and artificial materials. The portion of IR-02 in this subparcel contains the former location of AST S-505. AST S-505 was a 630,000-gallon tank used to store fuel oil to power the steam-generating power plant at Building 521. AST S-505 was emptied and removed in 1993.

IR-11 consists of Building 521 and the surrounding area, and exploratory excavation removal action site EE-18. From 1950 to 1969, Building 521 housed a high-pressure boiler power plant that burned fuel oil and was used by the Navy to generate steam. Building 521 is currently unoccupied. The building is a three-story, open-bayed structure containing large boilers and electrical switches, trenches for utility lines, offices, and a locker room. Asbestos was observed on many pipes inside the building during the 1995 VSI. Fifteen abandoned ASTs are present in a concrete vault and adjacent concrete pad north of the

building. Exploratory excavation removal action site EE-18 is located just northwest of Building 521; 36 yd^3 of soil was removed from this excavation site in 1997.

IR-14 is an undeveloped area used by Triple A for the disposal of oil and other mixed wastes on the ground surface. Demolished Buildings 510, 510A, 511, 518, and 520 were located at this site. Demolished Buildings 510 and 510A were used by the NRDL as laboratories. Demolished Building 511 was used as office space. Demolished Building 518 was used as a movie theater. Demolished Building 520 was used as a dental clinic.

IR-15 consists of two separate areas formerly used by Triple A. The oily liquid waste ponds area was used by Triple A as a disposal site for waste oil. The incineration tank area was used to burn miscellaneous materials. The types of materials burned in the incineration tank area are unknown.

The portion of IR-38 in this subparcel is the former location of demolished Building 509, which was used by the NRDL as an animal irradiation site. The site is currently vacant and is largely undeveloped.

IR-54 is the former location of demolished Building 511A, which was a woodworking hobby shop. The site is currently vacant and is largely undeveloped.

IR-02, IR-11, IR-14, IR-15, IR-38, and IR-54 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil and groundwater in Subparcel S-44.

5.1.5.13 Subparcel S-45

This subparcel contains Buildings 809, 810, and 811; demolished Building 807; numerous small sheds; the locations of closed-in-place USTs S-801 and S-802; a small portion of site IR-01/21; and sites IR-04, IR-56, and IR-72. IR-04 consists of a former scrap yard and Building 807. IR-56 consists of a railroad yard area used for lumber transport and storage. IR-72 consists of Buildings 810 and 811 and former USTs S-801 and S-802. The USTs were 10,000-gallon tanks used to store gasoline. USTs S-801 and S-802 were closed in place in 1991 and further investigation was conducted during the Parcel E RI.

- Building 807 is a fire-damaged wooden building. The remains of several fiber drums were observed inside the building in 1995. Wooden tank-like structures were observed near Building 807. They were labeled "Danger High Voltage."

- Building 809 houses the Golden Gate Railroad Museum. Associated rail cars, engines, parts, oils, paint, and cleaning solvents are stored in the building and in the numerous small sheds and huts in the area west of Building 809. Three ASTs in this area were empty and not in use; these tanks formerly contained diesel. Two tall silos formerly used for sandblast sand are located adjacent to Building 809.

- Building 810 was formerly used as the HPS hazardous waste storage area, but is currently empty and unoccupied. A transformer was observed within a fenced area east of Building 810 in 1995. Stained soil was observed near the transformer.

- Building 811 is an unoccupied platform formerly used as a diesel fueling station. USTs S-801 and S-802 were associated with this building.

IR-01/21, IR-04, IR-56, and IR-72 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil in Subparcel S-45.

5.1.5.14 Subparcel S-46

This subparcel is located in both Parcels A and E. In Parcel E, it contains no buildings and a small portion of site IR-04. IR-04 was investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), no remedial actions are expected to be conducted in the Parcel E portion of Subparcel S-46.

5.1.5.15 Subparcel S-OS

This subparcel is located in both Parcels D and E. The Parcel E portion of this subparcel consists of Buildings 527 and 600; Berths 30 through 42; and sites IR-01/21, IR-02, IR-03, IR-40, IR-52, and IR-73. Subparcel S-OS is an area created when the Bay margin was filled with quarried and artificial materials.

Waste piles and debris (such as wood, concrete, and metal) are scattered on the ground surface throughout this subparcel.

Sites IR-01/21, IR-02, and IR-03 are located along the shoreline. The shoreline is sandy and has been lined with riprap, steel cable, and other metal debris. IR-01/21 consists of an Industrial Landfill. A removal action is currently ongoing to contain groundwater at the Industrial Landfill with a sheetpile wall; this removal action was completed in mid-1998. The northwest portion of IR-02 contains an area approximately 250 by 400 feet in size used by the Navy and Triple A to dispose of radium-containing materials and industrial debris. The central portion of IR-02 contains Building 600, a former firing range, and several small areas used by Triple A for incineration or surface and subsurface disposal of industrial debris. Building 600 was built for use as the Bachelors' Enlisted Quarters but was never used and is currently vacant. The southeast portion of IR-02 consists of an area used by the Navy to burn domestic refuse. IR-03 consists of two former oil reclamation ponds used from 1944 to 1974 as part of a waste oil reclamation system. A removal action is currently ongoing to contain groundwater at the former oil reclamation ponds with a sheetpile wall; this removal action has been completed.

Site IR-40 is a pier (Pier 2) in the southeast portion of this subparcel that consists of Berths 30 through 36 and Building 527. Building 527 was used as an electrical substation. In 1988, Building 527 contained three electrical transformers, one of which was leaking PCB-containing oil onto the floor. Subsequently, the transformers were removed from the building. Building 527 contained two gutted electrical switch boxes during the 1995 VSI.

Site IR-52 is the railroad right-of-way, which is located outside of the HPS boundary. The railroad right-of-way consists of one pair of steel rails with wooden railroad ties. The railroad lines were formerly used by the Navy and Triple A and are currently used by the Golden Gate Railroad Museum for transporting trains to their restoration area at Building 809. The railroad tracks wind to an industrial area and are accessible by local residents and workers.

Site IR-73 consists of a former AST area and several areas formerly used for storage of drums containing oily liquids. IR-73 was formerly leased to San Francisco Asphalt and used as an asphalt manufacturing site. Four ASTs were formerly located at IR-73; these ASTs contained diesel and asphalt stock. Two heavily stained and damaged areas were observed in this area in 1993.

Sites IR-01/21, IR-02, IR-03, IR-40, IR-52, and IR-73 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil and groundwater in Subparcel S-OS.

5.1.6 Parcel F

Parcel F consists of the offshore area at HPS and was not surveyed during the basewide EBS VSI. Parcel F is considered IR-78. Parcel F is shown on Figures 5-1 and 5-7. Parcel F is described in Tables 1-1 and 5-1 and in Appendix G of this report. The remedy for Parcel F has not yet been selected.

5.1.7 Other (Formerly Used Defense Sites)

The FUDS consist of Buildings 815, 820, 830, and 831. These buildings were originally owned and used by the Navy; however, ownership of these buildings has been transferred to private, nonmilitary owners. These buildings were investigated during the Parcel E RI as sites IR-74, IR-75, and IR-76 because of their former use by the NRDL. The FUDS buildings were not inspected during the 1995 VSI and 1997 tenant survey.

IR-74 consists of Building 815 and the surrounding area. A gasoline station with four USTs was operated in this area in the early 1940s. The station was demolished and the USTs were likely removed during construction of Building 815 in the early 1950s. Building 815 was formerly used by the NRDL as the main laboratory; this building was cleared by the AEC in 1969. Building 815 is currently owned by Mr. Ted Lowpensky and is leased to Filesafe Company for document storage.

IR-75 consists of Building 820 and the surrounding area. Building 820 was formerly the NRDL cyclotron laboratory; this building did not require AEC clearance because radioactive material was never used or stored in the building. A 5,000-gallon UST formerly used to store fuel oil is reportedly present near the east side of the building. Building 820 is currently owned by Mr. Ted Lowpensky and is used by Lowpensky Mouldings as a wood moulding shop.

IR-76 consists of Buildings 830 and 831 and the surrounding area. Buildings 830 and 831 were formerly used by the NRDL as animal kennels now leased to UC San Francisco; these buildings did not require

AEC clearance because radioactive materials were never used or stored in the buildings. The area around these buildings consists of a former transformer location, a former lumber and motor storage yard, and an area of trace debris associated with the Industrial Landfill at adjacent site IR-01/21.

Sites IR-74, IR-75, and IR-76 were investigated during the Parcel E RI; results are documented in the draft final Parcel E RI report (TtEMI 1997b) and are summarized in Appendix G of this report. The remedy for Parcel E has not yet been selected because the draft final Parcel E FS report is not complete; this report will be published in 1999. Based on information presented in the draft Parcel E FS report (TtEMI 1998b), remedial actions are expected to be conducted for soil at FUDS site IR-76.

5.2 HAZARDOUS MATERIALS/HAZARDOUS WASTE AT HUNTERS POINT SHIPYARD

Part of the HPS information provided to the City of San Francisco at the time of transfer is a record of the current and past hazardous materials stored, released, and/or disposed of at HPS. Quantities of hazardous materials stored, released, and/or disposed of resulting from the Navy and tenants are discussed in the following sections. Hazardous material quantities that are required to be reported to the city are CERCLA- and RCRA-regulated substances (for more regulation information see Section 2.8 in Chapter 2). Quantities of petroleum products stored, released, and/or disposed of are also provided. Where possible for Navy-operated buildings, past hazardous waste annual generation rates were calculated by building and by parcel. Estimated quantities for hazardous materials by substance type and parcel were calculated using the data collected during the 1997 tenant survey. The 1997 tenant survey was designed for the purpose of calculating parcel hazardous material quantities.

5.2.1 Navy Hazardous Waste Generation, 1942 to 1974

Historical information on the quantities of hazardous substances the Navy stored, released, and/or disposed of is incomplete. Table 3-2A in Chapter 3 provides historical information on the Navy's hazardous waste storage and generation activities from 1942 to 1974; information is compiled from historical sources. Data for Navy hazardous waste generation activities from 1975 to 1995 were unavailable. Quantities were probably extremely minimal since the Navy leased the shipyard to Triple A. Limited historical data was available on the quantities of hazardous substances stored and generated in buildings at HPS from 1942 to 1974. Generation rates of some hazardous waste generated in certain buildings were found. Annual rates of hazardous waste generation were calculated for these buildings, extrapolating from the generation rate and making time assumptions (see note "e" in Table 3-2A). The

annual rates calculated should not be used with any degree of certainty and it is unknown if they reflect actual past Navy hazardous waste generation quantities. Table 5-2A presents the calculated Navy hazardous waste annual generation rates from 1942 to 1974 by building and parcel.

5.2.2 1997 Tenant Survey

The 1997 tenant survey provided current data on the status of hazardous materials stored, released, and/or disposed of by tenants leasing buildings from the Navy at HPS. The tenant survey was performed from September to November 1997. Data were collected to evaluate the following:

- Hazardous materials equal to or in excess quantities of 1,000 kilograms stored, released, or disposed of for 1 year or more
- Hazardous materials equal to or in excess of their CERCLA-reportable quantities stored, released, or disposed of for 1 year or more
- Stored, released, or disposed of quantities of petroleum products

A hazardous material inventory was constructed for approximately 55 buildings and their surrounding areas, Dry Dock 4, and the railroad right-of-way (IR-52). Appendix H contains the data collected during the 1997 tenant survey and Appendix B and Attachments B1 and B2 summarize the informal interviews and building tours that were part of the 1997 tenant survey. Table 3-2B in Chapter 3 summarizes all hazardous materials by type (such as paints, solvents, acids, total petroleum hydrocarbons [TPH]) for each building where hazardous materials were located. Table 5-2B summarizes the hazardous material by type for each parcel and provides estimated quantities of hazardous materials and petroleum products for each parcel.

From the data collected during the 1997 tenant survey on hazardous materials stored, released, and/or disposed of by tenants leasing buildings from the Navy at HPS, almost all quantities of hazardous materials are below CERCLA reportable thresholds. Exceedances are discussed in the following paragraph.

Two exceedances of CERCLA reportable quantities were reported for a pure hazardous substance or a quantity of 1,000 kilograms of a pure hazardous substance stored, released, or disposed of (CFR 40 Section 373). These two exceedances are described in Section 5.2.2.3, Parcel C; Section 5.2.2.4, Parcel D; and Table 5-2C. Most of the hazardous materials stored are substances in which a chemical or

material contains a certain percentage of a CERCLA-regulated substance. The information required to calculate exact quantities was unavailable and not usually listed on containers. For the purpose of calculating parcel quantities, all substances were considered pure hazardous materials. Thus, the quantities calculated are extremely conservative and actual values are lower.

The following subsections describe the results of the 1997 tenant survey for Parcels A through E.

5.2.2.1 Parcel A

Four buildings in Parcel A are leased from the Navy: Buildings 101, 110, 808, and 916 (Dago Mary's Restaurant). Buildings 101 and 110 are leased by J. Terzian, who subleases work areas to artisans. Paints and solvents are the principal hazardous materials stored in Parcel A. Over 1,000 kilograms of paint are stored in Building 101, with no reports of releases. Overall, an estimated quantity of 2,340 kilograms of hazardous materials and 388 kilograms of petroleum product are stored in Parcel A. None of the materials were pure substances that would be regulated under CERCLA. In addition, no quantities exceeded the reportable quantity or 1,000 kilograms by individual tenants.

5.2.2.2 Parcel B

Six buildings in Parcel B are leased from the Navy: Buildings 114, 115, 116, 120, 125, and 128. Buildings leased in Parcel B are currently used for office space, woodworking and framing shops, and material testing. Building 120 in Parcel B is an athletic club for police officers. Solvents and TPH are the principal hazardous materials stored in Parcel B. Over 1,000 kilograms of petroleum product is stored in Building 114, with no reports of releases. An estimated quantity of 833 kilograms of hazardous materials and 1,526 kilograms of petroleum product are stored in Parcel B. None of the materials were pure substances that would be regulated under CERCLA. In addition, no quantities exceeded the reportable quantity or 1,000 kilograms by individual tenants.

5.2.2.3 Parcel C

Eleven buildings and Dry Dock 4 in Parcel C are leased from the Navy: Buildings 134, 203, 211, 230, 253, 272, 275, 281, 300, 301, and 367. Buildings leased in Parcel C are currently used for refrigeration and air conditioning activities, storage, manufacturing, offices, and ship dismantling. Solvents, TPH, refrigerants, lead, asbestos, detergents, and antifreeze are the principal hazardous materials stored in Parcel C. Over 1,000 kilograms of TPH is stored at Buildings 367 and 372 and Dry Dock 4.

Astoria Metals is the main tenant in Parcel C that stores hazardous materials. Astoria Metals employs an on-site health and safety manager. Hazardous waste drums are stored in a marked hazardous waste area by Astoria Metals. Lead (15,910 kilograms) stored in Building 372 and asbestos (13,636 kilograms) stored at Dry Dock 4 were reported in quantities over the CERCLA reportable quantities. These materials constituted the only exceedances of a pure substance regulated by CERCLA to exceed their reportable quantities. The reportable quantities for asbestos and lead are 0.454 kilogram and 4.54 kilograms, respectively. An estimated quantity of 31,408 kilograms of hazardous materials and 19,187 kilograms of petroleum product are stored in Parcel C.

Astoria Metals reported a release of an unknown amount of diesel product at Dry Dock 4. The diesel spill was cleaned up on April 3 and 4, 1997. The spill occurred on the north side of the dry dock. Absorbents were used to soak up the diesel and contaminated soil was removed.

5.2.2.4 Parcel D

Twenty buildings in Parcel D are leased from the Navy: Buildings 302, 307, 308, 311, 363, 364, 366, 372, 381, 401, 402, 404, 407, 411, 417, 418, 419, 424, 435, and 606. Buildings leased in Parcel D are mainly used for storage, restoration activities, woodworking activities, metal analysis, manufacturing, sheetmetal fabrication, offices, and art activities. Adhesives/sealants, TPH, solvents, paints, and corrosives are the principal hazardous materials stored in Parcel D. Over 1,000 kilograms of petroleum product is stored at Buildings 401 and 411, and over 1,000 kilograms of adhesives/sealants is stored in Building 404, with no reports of releases. An estimated quantity of 3,350 kilograms of hazardous materials and 7,074 kilograms of petroleum product are stored in Parcel D. None of the materials were pure substances that would be regulated under CERCLA. In addition, no quantities exceeded the reportable quantity or 1,000 kilograms by individual tenants.

5.2.2.5 Parcel E

Six buildings and the railroad right-of-way in Parcel E are leased from the Navy: Buildings 371, 405, 406, 413, 704, and 809. Buildings leased in Parcel E are principally used for storage, automobile repair, and restoration activities. TPH is the principal hazardous material stored in Parcel E. Over 1,000 kilograms of TPH is stored at Buildings 704 and 809.

In 1996, an unknown amount of oil was released from a 55-gallon drum that overflowed when it rained outside Building 371. The current tenant was informed of the problem by the Navy, but the tenant did not

own the drum or the truck on which it was placed. Eventually, the truck and drum were removed. The spill area is approximately 40 feet from the southwest corner of Building 371. No information indicates that the spill was cleaned up.

An estimated quantity of 263 kilograms of hazardous materials and 19,764 kilograms of petroleum product are stored in Parcel E. None of the materials were pure substances that would be regulated under CERCLA. In addition, no quantities exceeded the reportable quantity or 1,000 kilograms.

5.3 ENVIRONMENTAL COMPLIANCE PROGRAM

Environmental compliance activities at HPS are conducted in conjunction with environmental restoration activities under the Navy's IRP. Typically, compliance programs at federal facilities address USTs, ASTs, hazardous materials and waste management, solid waste management, asbestos, radon, PCBs, air pollution, radiation-related programs, and wastewater discharges. Compliance-related actions are conducted at HPS by EFA West, primarily for asbestos, PCBs, USTs, and ASTs. Buildings with damaged, friable, and accessible asbestos, as well as abatement information are presented in Table 5-3. PCBs from transformers are summarized in Tables 5-4A and 5-4B. USTs have been removed or closed in place under RCRA, as described in Table 5-5. ASTs have been removed or are scheduled to be removed as regulated by Spill Prevention, Control, and Countermeasure (SPCC). Table 5-6 provides information on ASTs at HPS.

The requirements and status of the different compliance programs at HPS are described in the following sections.

5.3.1 Storage Tanks

Storage tanks include both USTs and ASTs.

5.3.1.1 UST Regulations

EPA is authorized to regulate USTs under Subtitle I and the State of California has a cooperative agreement with EPA to implement EPA's UST regulations within the state. The State of California has delegated UST enforcement to SWRCB, which has in turn delegated limited authority to enforce the UST program to local implementing agencies (usually county environmental health agencies). While EPA may enforce the federal regulations of RCRA Subtitle I, the regulatory program implemented under the

State of California's Health and Safety Code (HSC) is the primary regulatory and enforcement authority for UST sites at federal facilities.

5.3.1.2 UST Status

The earliest report related to USTs at HPS is the "Technical Report, Underground Tank Investigation" (IT 1989), which describes the results of field and laboratory studies conducted during the leak detection phase of a UST investigation. The objectives of the leak detection phase were the following: (1) identifying and confirming tank locations and tank contents, (2) identifying leaking tanks through the use of soil gas surveys or soil borings, and (3) summarizing results. Based on the evidence collected through the soil gas surveys, laboratory analysis of soil samples, and field observations, the report concluded that all but one of the 23 tanks studied at HPS had leaked. The report also concluded that "if it is assumed that the tanks are leaking or have leaked, then immediate removal or other interim actions (removal of tank contents) should be considered by WESTDIV" (IT 1989). The report also provided a site-by-site interpretation of the sampling results.

The contents of the tanks were sampled in 1990 to clarify the data provided in the IT report and further characterize the contents of each of the USTs at HPS. The results of these sampling activities are presented in a report titled "Underground Storage Tank Content Sampling" (PRC 1990a). The majority of the analytical results were consistent with what was previously reported in the IT report; however, four of the tanks sampled contained contents other than those previously reported and five additional tanks were found to contain previously unidentified contaminants (PRC 1990a).

The "Removal Action Plan/Closure Plan" (PRC 1990b) discussed the specific tasks, tank removal sequences, and performance standards necessary to remove or close each of the 23 USTs identified in the IT UST investigation report. The "Removal Action Plan/Closure Plan" provided information necessary to prepare accurate cost estimates for the removal or closure of the identified USTs, specified field activities to complete the removal or closure, and provided drawings identifying any site characteristics that might affect the UST removals. This portion of the UST closures at HPS would later be known as "Phase I." Twenty-three USTs were either removed or closed in place during Phase I of the UST program (PRC 1990b).

Historical data and field inspections indicated that 41 previously unidentified USTs were present at HPS. Of the 41 suspected USTs, one suspected UST was an AST, four were the responsibility of U.S. Army

Corps of Engineers**,** and 13 were either never installed or were removed, which left 23 USTs requiring removal. A second phase for the removal of these USTs began in 1993. The document titled "Draft Summary Report of Phase I and Phase II Underground Storage Tank Removals and Closures in Place" details the removal and in-place closure procedures, disposal of tank contents procedures, and closure and postclosure actions (PRC 1994c). Thirty-five USTs were removed and 10 USTs were closed in place during Phases I and II of the HPS UST program. UST sites with confirmed contamination from leaking tanks were further investigated for nature and extent of contamination at the RI stage, under the IRP. UST sites have been integrated into their corresponding IR/SI sites and tracked together as part of the IRP. The results of the UST RI are presented in the parcel-wide RI reports.

During all of the removals or closures in place, the RWQCB, who has authority to regulate USTs delegated their authority to the CCSF Department of Public Health (CCSFDPH). CCSFDPH representatives and DTSC were present and witnessed all the activities. The documentation of these activities was then submitted to CCSF, since CCSF is responsible for the regulation of tank closures in the area. Because all of the tanks leaked and require mitigation, the jurisdiction for the UST investigation transfers to the RWQCB, who would be responsible for the final certification. At the conclusion of the RI/FS process and cleanup at HPS, RWQCB will be responsible for certifying the cleanup and issuing final closure documentation.

According to the BER (Tetra Tech 1994), four USTs may be associated with Building 815. These USTs are suspected to be located under Building 815, a FUDS, and may have been removed during the construction of Building 815. These USTs were associated with a gasoline station that was active during the 1950s. Soil sampling in the vicinity of the former USTs was planned in 1996 to confirm the lack of residual contamination, but the Navy was unable to obtain access. A soil gas survey performed in November 1996 did not detect any contaminants; therefore, no further investigation is required (TtEMI 1997b).

Field work at HPS was conducted in December 1993 and January 1994 to verify the presence of unknown USTs cited in the BER (Tetra Tech 1994), as well as additional reports of USTs from personnel involved with IR activities at HPS. The results of the field work determined that some tanks mentioned in the BER were not petroleum-containing USTs, but rather hazardous waste tanks. These hazardous waste tanks are regulated under RCRA Subtitle C and generally undergo a more stringent closure procedure than petroleum-related USTs, which are regulated under RCRA Subtitle I.

Three hazardous waste tanks are located in the fenced area outside Building 411. These tanks are dipping tanks used in the former Electroplating Shop and are cited in the work plan for removal at the PPY (IR-09) (HLA 1991d). The removal of these hazardous waste tanks was started in November 1995 by Zacar, a subcontractor to SFBPWC. Two hazardous waste tanks are in the vicinity of Building 439. One of the tanks is labeled "Acid Waste" and the other is labeled "Alkaline Waste." These two tanks are currently being investigated under the IRP. Records show that these two tanks were never used. If the current ongoing investigation in Parcel D can demonstrate that no contamination is associated with these tanks because they were never used, they will be considered nonregulated tanks and will likely be removed at a later date.

Table 5-5 presents an inventory of USTs removed or closed in place at HPS, as well as the contents of the tanks. Most of the tanks contained petroleum products, waste oils, or solvents that would be considered hazardous substances under EPA or state hazardous substance regulations. Four USTs contained water.

5.3.1.3 AST Regulations

EPA has regulated ASTs under the oil pollution prevention regulation (40 CFR Part 112) also known as the SPCC provision, since 1973. The SPCC regulation was amended in 1976. In October 1992, EPA again began developing proposals that would revise the SPCC regulation in two phases, with a general emphasis on strengthening the old provisions and promoting good engineering practices. The proposed revisions will strengthen Phase I of the SPCC plan to require that certain provisions are mandatory and no longer discretionary.

The Oil Pollution Act of 1990 (OPA) places liability for removal costs and damages on onshore AST facility owners and operators, in the event that oil or other hazardous substances are discharged into navigable waters and adjoining shorelines. The U.S. Coast Guard (USCG) holds primary enforcement authority for the OPA. EPA revised the OPA regulations in January 1993, which now require AST facility owners and operators to submit SPCC response plans to EPA. The new rule contains language that mandates tank owners to install the means to contain an AST facility leak or release. Parts 262, 264, and 265 of RCRA Subtitle C apply to ASTs as part of the regulations governing generators of hazardous waste as well as treatment, storage, or disposal (TSD) facilities. The Superfund Amendments and Reauthorization Act (SARA), Title III, requires nonpetroleum tank owners and operators to report spills of hazardous wastes, regulates responsible party liability and cost recovery for cleanups, and has established cleanup requirements.

Occupational Safety and Health Administration (OSHA) has developed national standards (29 CFR Section 1910.106) for the handling, storage, and use of flammable and combustible liquids. Confined spaces regulations under 29 CFR Section 1910.146, "Permit Required Confined Spaces for General Industry" also potentially apply to AST facility owners and operators.

While EPA's NPDES does not specifically regulate ASTs, it does regulate the discharge of pollutants to surface waters. For AST facilities, runoff from diked areas may not be directed immediately into a storm sewer if quality standards have not been met. In this case, AST facilities may be required to use separators or other forms of water treatment prior to discharging runoff into storm sewers.

AST regulations in the State of California include the HSC, Chapter 6.67, Division 20, Section 25270. The Public Resource Code, Section 3106, also regulates ASTs.

5.3.1.4 AST Status at HPS

A comprehensive survey of ASTs has not been reported at HPS. Table 5-6 is the most current inventory of ASTs at HPS. This list does not include open dip or process tanks, tanks located above the first floor of a building, or sandblast baghouses.

Ten ASTs were removed from HPS as of June 1996. These tanks included Tanks S-505 (HLA 1993b) and nine ASTs from the Tank Farm (IR-06) (HLA 1993a). These tanks were removed as part of the Navy's IRP because of obvious signs of leakage or because they presented an imminent threat of leakage. An old photograph of the Tank Farm shows saddles for nine more tanks that were apparently removed earlier, but no documentation has been found to confirm these tanks (PRC 1994c). Since 1996, all ASTs in IR-06, including pumphouses (Buildings 111 and 112), support tracks, and associated piping within the bermed areas of the site, have been removed. Approximately 140 yd^3 of soil was excavated and disposed of off site. IR-06 was graded and a liner was installed as a temporary cap.

In June 1997, IT reviewed specific ASTs at HPS and recommended specific actions for each AST. Eight AST locations were inspected: Buildings 203, 211, 258, 302, 521, 405, and 809, and the South Pier. Thirty-six ASTs were evaluated (IT 1997b). Table 5-6 lists HPS ASTs and ASTs scheduled for cleaning and removal of any stored materials in the tanks in 1998 (IT 1998b). Two ASTs at Building 405 and the South Pier are scheduled to be removed by Supervisor of Shipbuilding, Conversion, and Repair, Portsmouth, Virginia, Environmental Detachment, Vallejo (SSPORTS). All of the tanks removed as part of the Navy's IRP contained petroleum products or water, except for two ASTs that contained solvents

and would be considered hazardous waste tanks. Based on a literature review, 20 other tanks have been removed from HPS, but no records exist to document the disposal history of the tanks. Compilation of a comprehensive listing of all ASTs at HPS is complicated, because the activities of the Navy's tenants are self-regulated and prevent the completion of a full survey.

5.3.2 Hazardous Waste Management

Hazardous waste is defined in RCRA as a solid waste or combination of solid wastes that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may bring about the following:

1. Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness

2. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or other managed (RCRA 1004[5]; 42 United States Code [USC] 6903[5])

5.3.2.1 Authority

Several federal and state regulations apply to hazardous waste management. Among these, the most applicable are RCRA Subtitle C (40 CFR Parts 260 through 270), Hazardous Materials Transportation Act (49 CFR Parts 170 through 179), and CCR Titles 22 and 23.

Handling and management of hazardous wastes generated during normal activities at HPS are described in the hazardous waste management plan for NAVSTA Treasure Island (EFA West 1992). The Navy is planning to update this plan; however, the actual completion date has not been determined. In addition, under the IRP, the Navy's CLEAN contractors operate according to the "Program Waste Management Plan for Investigation-Derived Waste" (PRC 1994a).

5.3.2.2 Hazardous Waste Status at HPS

Hazardous materials and hazardous waste management issues at HPS include IDW, facility tenants, and housekeeping practices.

Investigation-Derived Waste

Buildings 414 and 810 were used for accumulation and storage of hazardous waste generated under the Navy's IRP and by the PWC. IDW generated during the IRP was stored in Building 810. In an attempt to better control IDW, the IDW storage area for the IRP was moved from Building 810 to 130.

IDW generated under the IRP is generally stored in steel-covered roll-off bins in the area under investigation. IDW that is suspected of containing contaminants different from the rest of the site or that is visibly contaminated is segregated and stored in 55-gallon steel drums. These drummed wastes were then transported to Building 130, where other IDW drums are stored. These drums were waiting to be characterized and properly disposed of off site. All IDW that was currently generated and stored in Building 130 is sampled, characterized, and disposed of off site within 90 days. In late 1997, the Navy constructed a new concrete-paved and fenced hazardous waste storage yard of about 3,000 square feet with surrounding asphalt berms. Five large portable hazardous waste storage locker units were installed at the yard. The new hazardous waste storage yard, located at Manseau and Hussey Streets in Parcel E, replaced Building 130 which was previously used for the Navy's 90-day storage of hazardous materials and waste. IDW can also be stored at the new hazardous waste storage yard.

Potentially radioactive materials contained in 55-gallon steel drums or steel-covered roll-off bins were stored in a separate containment structure inside Building 414. The Navy Radiological Affairs Support Office (RASO) is in charge of all radioactive materials at HPS. These IDW drums were moved to Building 130 and stored in a locked steel storage vault. In late 1997, the drums were disposed of off site by a RASO subcontractor.

Facility Tenants

Tenants leasing buildings from the Navy are responsible for management and appropriate disposal of their hazardous materials and wastes. Tenants are required to comply with all applicable laws and regulations pertaining to the use, treatment, storage, disposal, and transportation of hazardous materials and wastes. Tenants are required to maintain and make available to the Navy all records, inspection logs, and manifests that document compliance.

5.3.3 Solid Waste Management

Solid wastes are discarded materials, excluding hazardous substances as defined by CERCLA and the State of California Carpenter-Presley-Tanner Hazardous Substance Account Act. The term "solid waste" is a statutory term that encompasses any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility. Solid waste also include other discarded material, such as solid, liquid, semi-solid, or contained gaseous materials resulting from industrial, commercial mining, or agricultural operations or community activities. Solid waste does not include (1) solid or dissolved material in domestic sewage; (2) solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended; or (3) source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (AEA), as amended.

5.3.3.1 Solid Waste Regulation

Solid waste management regulations applicable to HPS include, federal, state, local, and Navy requirements. California generally places the burden of action and responsibility on the counties to meet the state solid waste management requirements.

RCRA established public safety and health standards for the disposal of solid waste. RCRA and the Military Construction Codification Act of 1982 provide various means of recovering value from solid waste. Wastes may be recycled, reclaimed, used as a fuel supplement, or sold for "profit."

California Assembly Bill 939 requires counties in California to divert 25 percent of their solid waste from the state's landfills by 1995 and 50 percent by the year 2000. California Senate Bill 1223 establishes comprehensive state programs designed to increase recycling and encourage the development of commercial markets for recyclable materials.

Chief of Naval Operations (CNO) Instruction 5090.1A, Chapter 10, requires that all Navy installations comply with federal, state, and local solid waste management requirements. Each installation is required to develop a qualified recycling program to reclaim scrap metal, high-grade paper, corrugated containers, and aluminum cans. Installations are required to compost yard waste where feasible.

5.3.3.2 Solid Waste Status at HPS

Solid wastes generated by DoD tenants at HPS are collected by a private contractor in accordance with all applicable regulations. Private tenants manage the collection of their own wastes. No solid wastes are disposed of on HPS property. When HPS was an annex of Treasure Island, three private contractors were authorized to obtain scrap materials. Since HPS was transferred to EFA West, no contractors have been authorized for these scrapping activities.

5.3.4 Polychlorinated Biphenyls

PCBs are a hazardous substance under CERCLA. CERCLA sites contaminated with PCBs may be cleaned up according to standards defined by the Toxic Substances Control Act (TSCA) and regulations promulgated in 40 CFR Part 761. Under TSCA, PCB fluids are classified into three categories:

1. **NonPCB:** PCB fluid concentration is less than 50 ppm
2. **PCB-Contaminated:** PCB fluid concentration is greater than or equal to 50 ppm, but less than 500 ppm
3. **PCBs:** PCB fluid concentration is greater than or equal to 500 ppm

Under 40 CFR 761, PCBs at concentrations greater than or equal to 50 ppm (classified as PCB or PCB-contaminated) are required to be disposed of in an incinerator or by an alternative method of equal performance. California regulates PCB waste liquid with concentrations of 5 ppm or greater. Any handling or disposal of transformer fluids at levels higher than 5 ppm must be in accordance with current state laws and regulations found in CCR Title 22, Division 4, Chapter 30.

PCB Status at HPS

Several surveys have been conducted to identify PCBs and PCB-contaminated fluid with concentrations greater than 50 ppm in electrical equipment at HPS. After the shutdown of shipyard operations and the cessation of Triple A operations from 1974 to 1988, the replacement and removal of PCB-containing equipment was conducted by NAVSTA Treasure Island. During this period, 199 transformers were removed and 99 transformers were found to contain PCBs. A Navy contractor, American Environmental Management Corporation (AEMC), conducted the majority of the removals in 1987 and 1988. YEI conducted a facility-wide utility study in 1988 that included a survey of all existing on-site electrical

equipment containing PCBs (YEI 1988). At that time, YEI found 83 pad- or pole-mounted transformers containing PCBs at less than 50 ppm and 169 at greater than 50 ppm. Out of the 206 breakers and switches surveyed, 112 were found to be PCB-contaminated (YEI 1988).

Under the IRP, 78 transformer locations found by YEI to contain PCBs at concentrations greater than 50 ppm were surveyed and evaluated for leakage and contamination. Removals were recommended whenever any problems were found. The IRP evaluated the sites of 118 transformers that were removed prior to 1988. These sites were visually evaluated for leakage of oils containing PCBs, primarily through staining. Since these previous studies only addressed equipment containing PCBs with fluid concentrations greater than 50 ppm, additional work has been proposed to address equipment with lower concentration levels.

The SFBPWC had been tasked by EFA West to update the existing 1989 PCB survey report and to remove and dispose of PCB-containing equipment that fall under the TSCA criteria of 50 to 499 ppm. Additionally, the Navy is removing all electronic equipment with PCB concentrations greater than or equal to 5 ppm. The removal and disposal of 239 PCB-containing electrical equipment was completed by SFBPWC in 1996. Tables 5-4A and 5-4B contain the following information: (1) list the PCB-containing electrical equipment inventory in the SFBPWC survey report (PWC 1996); and (2) updated status information on the 35 removed out-of-service electrical equipment which contained PCB concentrations equal to or greater than 5 ppm. Currently, EFA West has tasked SSPORTS to remove 14 more remaining out-of-service electrical equipment, which contain PCB concentrations equal to or greater than 5 ppm. This should be completed in 1998. After this work is completed, the Navy will have no transformers or oil circuit breakers which are out-of-service with PCB concentrations of 5 ppm or greater at HPS (SSPORTS 1998).

5.3.5 Asbestos

Asbestos is a group of naturally occurring fibers that are heat- and chemical-resistant. Asbestos fibers are flexible and, when handled, break down into finer fibers that can become airborne. These fine fibers may cause lung cancer when inhaled. Asbestos had been used in fire-resistant building products, insulation, brake pads, and thermal system insulation (TSI) for steam lines.

At HPS, the naturally occurring asbestos mineral is found in the form of chrysotile, which is in 1/8-inch veinlets scattered throughout the serpentinite bedrock. The type of asbestos mineral considered the most

harmful is crocidilite. Crocidilite is not found at HPS. Since the only release of asbestos fibers to the air would be through the excavation and crushing of the serpentinite bedrock, the use of normal dust-suppression techniques during excavations should be more than adequate to alleviate health concerns. Damaged, friable, and accessible asbestos found in buildings at HPS will be removed in accordance with all applicable regulations.

The following sections describe the regulations that address asbestos and the status of asbestos at HPS.

5.3.5.1 Asbestos Regulation

Federal regulations govern the manner in which asbestos can be used or handled. This discussion focuses on regulations dealing with worker protection and the disposal of asbestos waste materials. Several federal and state agencies have regulatory jurisdiction over asbestos: EPA, DOT, OSHA, California Occupational Safety and Health Administration (Cal/OSHA), and the State of California Air Board.

Under the CAA, EPA regulates asbestos through NESHAP. These regulations address asbestos industries, application of ACM in new buildings, and handling and disposal of ACM during demolition and removal operations. Specific regulations for ACM in buildings are listed below (EPA 1985):

- Before building demolition of more than 260 linear feet of asbestos pipe insulation in a building or the removal of more than 160 ft^2 of asbestos surfacing material during renovation, advance notice must be filed with the EPA regional office and/or state.
- ACM can be removed only with wet removal techniques. Dry removal is allowed only under special conditions and with written EPA approval.
- No visible emissions of dust are allowed during removal, transportation, and disposal of ACM.

EPA also regulates asbestos in schools under the Friable ACM in Schools, Identification, and Notification Rule, promulgated under the TSCA (EPA 1985). There are no schools located on HPS property.

As specified in the Hazardous Materials Transportation Act, DOT considers asbestos a hazardous material. The Act (1) categorizes asbestos for transportation requirements, (2) establishes a reportable quantity of 1 pound, (3) specifies asbestos shipping container requirements, and (4) establishes standards intended to limit exposure of transportation personnel (Carson and Cox 1992).

OSHA regulations for asbestos specify airborne standards for asbestos workers, engineering and administrative controls, workplace practices, medical surveillance, and worker protection requirements.

DoD released its policy for ACM at BRAC properties in 1994 (DoD 1994). The policy states that unless ACM is determined to pose a threat to human health at the time of transfer, all property containing ACM will be conveyed, leased, or otherwise disposed of as-is through the BRAC process. Prior to property disposal, all available information on the existence, extent, and condition of the ACM will be incorporated into the EBS or other appropriate documents, such as the FOST, to be provided to the transferee. The information provided to the transferee will include the following:

- Available information on the type, location, and condition of asbestos in any building or improvement on the property
- Results of testing for asbestos
- A description of asbestos control measures taken for the property
- Available information on costs or time necessary to remove all or any portion of the remaining ACM
- Results of a site-specific update of the asbestos inventory performed to revalidate the condition of the ACM

5.3.5.2 Asbestos Status at HPS

Asbestos issues at HPS have been addressed in two programs: the IRP, which investigates potential contamination from various chemicals, and the compliance program, which ensures the Navy's compliance with the various applicable regulations.

The "Area Study for Asbestos-Containing Material and Organic and Inorganic Soil Contamination" (EMCON and Associates [EMCON] 1987) documents the results of a field and laboratory investigation to identify possible areas having ACM and other hazardous substances at locations of future construction at HPS. In the study, 103 exploratory soil borings in two study areas (A and B) were drilled to 5 feet bgs and sampled. Surface samples of suspected ACMs were also obtained (EMCON 1987). Study Area A was generally located within Parcels D and E, and Study Area B was located within the southeast portion of Parcel D and Parcels A and B.

Surface samples analyzed contained measurable or trace quantities of asbestos. The asbestos was generally identified in areas of building demolition, scrap metal processing, waste landfilling (the Industrial Landfill), and insulation of shipboard equipment. Asbestos was typically identified as pipe lagging, transite shingles, tank insulation, and general debris (EMCON 1987).

Soil samples from Study Area A contained natural and artificial asbestos at levels in excess of the regulatory criteria of 1 percent, based on total threshold limit concentration (TTLC), CCR Title 22, Section 66699, in 30 of 61 soil samples. Twenty-eight of these samples showed naturally occurring asbestos, generally in the form of chrysotile, which is found in the serpentinite bedrock fill that has been placed throughout the shipyard for site grading. One sample contained artificial asbestos in excess of 50 to 60 percent chrysotile. Seven samples displayed a range of 1 to 10 percent asbestos, one at 10 to 20 percent, and 14 samples revealed trace amounts. Because of bias in the selection of sampling locations (if the certified industrial hygienist observed suspected ACM, that soil portion was sampled), the reported concentrations may not be representative of the average soil conditions (EMCON 1987).

Natural and artificial asbestos were detected at levels above the regulatory criteria in 19 of the 45 soil samples collected in Study Area B. Five of the samples contained artificial asbestos, while the remaining 14 samples contained naturally occurring asbestos in the bedrock fill. The asbestos content most commonly encountered was 1 to 10 percent asbestos, with 11 samples at 1 to 5 percent asbestos, seven samples at 1 to 10 percent asbestos, and one sample at 5 to 15 percent asbestos. Trace amounts were found in five samples. As in Study Area A, the data may not be representative of average soil conditions due to sample bias. The highest concentration detected was 5 to 15 percent at boring BB3-1 (adjacent to Building 116 in IR-62) (EMCON 1987).

Asbestos and other regulated hazardous waste compounds were detected in varying concentrations at both of the study areas. ACMs were identified on the ground surface, and natural and artificial asbestos was detected below the ground surface (EMCON 1987).

The "Post Construction Report on the Cleanup of Asbestos-Containing Materials at the Water Softening Treatment Area, Building 521 and Various Remote Sites" (PRC 1990c) summarizes the asbestos abatement activities and details the results of air and bulk sampling. The asbestos abatement activities were performed in response to a study conducted in 1990, which indicated that friable asbestos in poor condition was present at 24 UST sites at HPS. An approved work plan specified the removal of

approximately 215,000 ft^2 of nonfriable ACM and 11,512 ft^2 of friable ACM from 24 sites. The asbestos removal activities began on April 30, 1990 and were completed September 5, 1990 (PRC 1990c.)

Tetra Tech conducted an asbestos survey at HPS between May and July 1993. The survey consisted of an inspection and subsequent sampling of suspected ACM in Parcel A and Dry Dock 4 buildings. The survey involved only nondestructive inspection and sampling procedures. Sixty-eight buildings, five manholes/vaults, one water tank, and one dry dock were inspected for ACM. Ambient air samples were collected at Buildings 101, 203, 813, and 901, where damaged or ACM was suspected. Microvacuum samples were taken in Buildings 813 and 901. ACM was identified in 74 of the 75 buildings and structures inspected. The "Asbestos Survey at Hunters Point Annex, Parcel A and Dry Dock 4" provides detailed information for each building, the general operation and maintenance (O&M) plan, laboratory data sheets, asbestos survey inventory forms, and asbestos database report. The O&M plan describes how ACM should be handled (Tetra Tech 1993e).

Asbestos building inspectors from MINS conducted a survey to identify ACM at HPS between August and October 1993. The results of the survey provided an inventory of ACM in the buildings and structures in Parcels B through E. Of the 148 buildings and structures inspected, only Buildings 145, 158, 323, 371, 438, and 822 were found not to contain either asbestos, assumed ACM, or suspected ACM. One hundred thirty-eight buildings contained assumed ACM and 98 buildings contained confirmed ACM. Seventy-six buildings contained friable and damaged ACM requiring abatement. Results of the survey were provided in the "Asbestos Survey Report, Naval Station Treasure Island, Hunters Point Annex, Parcels B through E" (MINS 1994a).

As part of the IRP, additional samples were collected during the first 22 IR SIs from the surface to 5 feet bgs. Evaluation of this data confirmed the presence of low levels of naturally occurring chrysotile asbestos site-wide from the native serpentinite bedrock.

ECC repaired and encapsulated damaged TSI in 41 buildings, removed and disposed of loose asbestos, and cleaned crawl spaces in Buildings 101, 102, 901, 66-A, and H at HPS. The "Hunters Point Parcel A Asbestos Remediation Report" summarized ECC's remediation and management operations (ECC 1995).

In 1997, PWC finished asbestos remediation work at HPS. PWC repaired, encapsulated (by wet wrapping), or removed and disposed of loose or damaged asbestos pipe insulation and asbestos debris in

82 buildings at HPS. The "Asbestos Remediation Report" for Parcels B through E summarizes PWC's remediation and management operations (PWC 1997).

Table 5-3 provides an inventory of buildings containing damaged, friable, and accessible asbestos, as well as abatement information. Asbestos abatement for Parcels A through F has been completed.

5.3.6 Radon

Radon is a decay product of uranium that is naturally occurring in some geologic formations, primarily granitic rock. Building products, especially cinder blocks made from materials high in granitic rock, may release radon gas. Radon may pose a hazard in airtight buildings where the gas can accumulate (Carson and Cox 1992). The following sections describe the regulations that address radon and the status of radon at HPS.

5.3.6.1 Radon Regulation

Radon is regulated under CERCLA as amended by SARA. Title IV of SARA contains the Radon Gas and Indoor Air Quality Research of 1986. Section 403 of SARA outlines a research program that emphasizes the gathering of data for radon gas, reporting requirements, and funding details (Carson and Cox 1992).

Under Federal Law 100-551, Section 309, EPA requires all federal departments and agencies to assess and mitigate radon contamination in any buildings they own. Navy policy, CNO Instruction 5090.1A, requires testing all Navy buildings and housing units occupied for more than 4 hours per day for the presence of radon gas. Both the Navy and EPA require mitigation for radon levels exceeding 4 picoCuries per liter.

5.3.6.2 Radon Status at HPS

No buildings or housing units at HPS have been surveyed for radon and radon abatement has not been conducted. DoD policy is to ensure that any available and relevant radon assessment data pertaining to BRAC property being transferred is included in property transfer documents. DoD policy is not to perform radon assessment and mitigation prior to transfer of BRAC property unless otherwise required by applicable law (DoD 1994).

5.3.7 Resource Conservation and Recovery Act Facilities

No RCRA facility investigation or RCRA facility assessment have been conducted at HPS. The Navy does not have a RCRA permit for HPS, because the Navy operates under the 90-day storage clause for hazardous waste generators. Prior to the BRAC designation of the facility, the Navy conducted internal audits and audits of other federal agencies under the control of NAVSTA Treasure Island for RCRA activities. No recent audits have been conducted by the Navy or any regulatory agency. HPS tenants are required by their lease agreements to comply with RCRA regulations. As a result, potentially RCRA-contaminated sites not addressed under the IRP were investigated as sites potentially contaminated during the last 10 years as a way of evaluating past tenant practices.

The objective of this investigation was to perform a "RCRA-type" audit of past and present tenants. The survey involved a record search of all existing documents, which included previous IRP reports, aerial photographs, inspections, permits, and available files at regulatory agencies and the Navy. Field inspections were conducted, along with interviews of personnel and review of any tenant files accessed. Since this was not an actual RCRA audit, it was impossible to review all of the information or gain access to all of the sites. This investigation is documented in the "Site Assessment Report, Potentially Contaminated Sites, Parcels B, C, D, and E, Naval Station Treasure Island, Hunters Point Annex" (HLA 1994c). A total of 110 buildings or areas forming 75 SA sites were included in the field inspection. Of the 75 SA sites investigated, 28 sites were recommended for further investigation based on observed or potential releases of chemicals to the environment. These sites were incorporated into the IRP and the results for those investigations were incorporated into the individual parcel RI reports.

5.3.8 National Pollutant Discharge Elimination System Permits

Dry Dock 4 is leased to Astoria Metals for dismantling of Navy ships. The Navy transferred its NPDES permit to Astoria Metals for Dry Dock 4 (EFA West 1996).

EFA West also holds an interim NPDES permit for storm water outfalls at HPS. Compliance reports are submitted to the RWQCB, in accordance with the conditions specified in both permits.

5.3.8.1 Storm Water Pollution Prevention Plan

The "Addendum Storm Water Pollution Prevention Plan, Hunters Point Annex" (Radian 1995) to the "Storm Water Monitoring Plan" (PRC/Montgomery Watson 1994) outlines the latest pollution prevention

practices at HPS. It updates the current HPS strategy for reducing and preventing storm water pollution, contains a list of industrial activities at HPS, lists the personnel responsible for implementing the Storm Water Pollution Prevention Plan (SWPPP), outlines best management practices for each industrial activity identified at HPS in order to reduce and prevent storm water pollution, and outlines the erosion and sediment control practices at HPS.

5.3.8.2 Discharges to the City and County of San Francisco Sanitary Sewer System

The Navy holds a permit to discharge from the existing sanitary sewer system at HPS, which collects facility-generated sewage and conveys it to the City of San Francisco's wastewater treatment system. Surface water runoff is collected by the storm drain system and discharged into San Francisco Bay through several outfalls. The Navy holds a NPDES permit for regulating discharge from the storm drain system at HPS.

When discharging IDW wastewater, HPS obtains a batch discharge permit from the city each time it is necessary to discharge into the sanitary sewer system (EFA West 1996). Purged groundwater, decontamination water (from cleaning field equipment), and minor amounts of storm water that collect around the sampling equipment from RI activities is collected, stored, and sampled on site. The results of the samples are submitted to the city, which examines the results for compliance with city discharge limits. The city issues a permit to HPS as long as the sample results are within the discharge limits for industrial wastewater. Wastewater from the IRP is discharged from Pump Station A at Parcel A to the SWPCP approximately eight times per year.

Surface water runoff at HPS generally moves by sheet flow to the lower areas of the site (PRC 1994e). Runoff is collected by the storm drain system and is generally discharged into San Francisco Bay through several outfalls.

In addition to purged groundwater and surface runoff, other water discharged to the sanitary sewer system includes groundwater that infiltrates into the sanitary sewer system at HPS. Groundwater infiltrates the sanitary sewer system primarily within Parcel D and the east portion of Parcel E. Groundwater infiltration is primarily due to the poor integrity of the sanitary sewer lines and the location of the sanitary sewer lines, which have sunk through the Artificial Fill to beneath the groundwater table in low-lying areas. Groundwater is further enhanced by tidal influence when Bay water infiltrates into the overlying

sanitary sewer system during periods of high tide. The infiltrated groundwater is discharged along the sanitary sewer to Pump Station A at HPS and then to the SWPCP.

5.3.9 Oil-Water Separators and Sumps

Subsurface steam pipes were located at the base of the former oil reclamation ponds on Parcel E (IR-03). The steam pipes were used to heat the liquid in the ponds to facilitate oil-water separation. The Navy operated these ponds from 1944 to 1974. The water drawn off during the separation process was discharged to San Francisco Bay, and the reclaimed oil was removed about three times per year by a private contractor. A treatability study has been developed to evaluate the feasibility of thermally and chemically augmented recovery of light nonaqueous-phase liquid (LNAPL) or oil from the ponds. Recommendations made by the treatability study may be implemented under the IRP (PRC 1995c).

Leaking sumps are investigated and remediated under the IRP.

5.3.10 Lead-Based Paint

LBP hazards are defined in the Federal Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of PL 102-550) as codified in 42 USC Sections 4822, 4851-4856, and 15 USC Section 2688 (Act) as "any condition that causes exposure to lead...that would result in adverse health effects." Lead exposure is especially harmful to young children and pregnant women. The Act provides for regulation of the abatement of lead hazards from LBP, lead-contaminated dust, and lead-contaminated soil for target housing only. The Act defines "target housing" as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing for the elderly or persons with disabilities), and any 0-bedroom dwelling. In addition, 35 CFR Part 745 requires that any seller or lessor must disclose known LBP or LBP hazards on residential housing built before 1978.

The Navy is required by the Act and subsequent DoD BRAC guidelines (DoD 1994) to survey and abate LBP hazards on target housing constructed before 1960. The DoD guidelines also stipulate conducting LBP surveys at target housing constructed between 1960 and 1978. No survey or abatement is required at housing constructed after 1978; since there is no target housing at HPS Parcels B through F, no LBP survey or abatement has been conducted for these parcels.

A LBP sampling survey was performed at Parcel A in 1993 (Tetra Tech 1993f). Additional sampling for LBP was conducted in 1997 (IT 1997c). The result of the two surveys found that the average lead concentration in soil surrounding residential structures on Parcel A is less than residential lead PRG for residential soil. Therefore, lead in soil at Parcel A does not pose a health risk to future residents at Parcel A.

None of the residential buildings in Parcel A are currently occupied. Because the proposed transfer of Parcel A will not involve the use of any existing structures for residential purposes, the Navy has not implemented a LBP abatement program in Parcel A. The City of San Francisco plans on demolishing all residential structures in Parcel A and existing surface soil may be excavated and removed, and the site regraded. Therefore, lead present in surface soil as a result of peeling or chipped LBP could be removed and properly disposed of during demolition and reconstruction activities, further protecting the health of future residents.

If a nonhousing structure is identified by the reuse plan for future use as housing, the Navy would consider the structure to be target housing and would take the appropriate measures depending on the age of the structure. One exception to the DoD policy is that inspection and/or abatement of target housing is not required if the building is scheduled for demolition. The Navy disagrees with the EPA's and DTSC's position that structures constructed prior to 1978 should be evaluated to determine if lead levels exist in soils that may cause a risk to future users.

If any work is conducted on structures coated with LBP, regulations for air exposure to workers under OSHA would apply. Lead-contaminated residues generated during paint removal are regulated under RCRA if found to be a characteristic hazardous waste, or under the California Hazardous Waste Management Regulations if they failed the waste extraction test (WET) or exceeded the TTLC for lead (1,000 ppm lead) as described in CCR Title 22, Chapter 11, Section 66261.24(a).

Residential Facilities

Residential facilities include any house, apartment, or structure intended for human habitation. Navy practice (NAVFAC 1996) is to treat structures that would typically accommodate children under 6 years of age for extended periods of time, such as a childcare facility, elementary school, or playground, in the same manner as target housing, although the law does not specifically address them as such.

No target housing is present in Parcels A through F. As a result, no surveys or abatement of LBP hazards are required in accordance with the Act.

Nonresidential Facilities

Under the Act, federal agencies are subject to all federal, state, and local requirements with respect to LBP and LBP hazards (15 USC Section 2688). No federal, state, or local requirements currently exist for surveying and abating LBP in nonresidential facilities. However, EPA and DTSC consider a release to soil of LBP from any DoD building or structure to be a CERCLA hazardous substance release. The Navy's policy for LBP cleanup in nonresidential areas is to respond to the presence of LBP under CERCLA in the same manner and to the same extent that EPA and DTSC have responded. Federal facilities must comply with CERCLA "in the same manner and to the same extent, both procedurally and substantively, as any non-governmental entity." If a regulatory agency requires DoD to engage in LBP response actions not required of the private sector, there is a violation of CERCLA 120(a)(1). In addition, DTSC insists that LBP contamination be addressed at DoD installations, but not at other sites within California. For the Navy to comply with this request would be a violation of CERCLA Section 120(a)(4) that requires Navy to comply with state removal and remedial actions laws only to the extent the state law is uniformly applied within that state. In the event that EPA or states develop and issue regulations for LBP in nonresidential areas, the Navy will honor its CERCLA 120(h) responsibilities to "take any additional remedial action necessary after the date of transfer."

5.3.11 Utilities

The utilities at HPS studied under the IRP include the storm drain, sanitary sewer, and steam line systems, as described in the following sections. Section 4.3 of this EBS contains figures showing the location of the utility systems at each of the parcels in HPS, as well as a discussion of the status of the investigation of the utilities at each parcel.

5.3.11.1 History of Storm Drain and Sanitary Sewer Systems

The storm drain and sanitary sewer systems, constructed from 1942 through 1958, were originally combined. Separation of the systems began in 1958 and was largely completed by 1976, although several interconnections were corrected at a later date. The storm drain and sanitary sewer lines are being investigated under the IRP as SI-50 and IR-50, respectively.

5.3.11.2 History of Steam Line System

The steam line system, constructed approximately 40 years ago, spans the entire shipyard. The primary function of the steam lines was to supply steam to heat buildings and ships docked at the facility and to warm fuel lines to facilitate fuel flow. Portions of the system were used until 1984. The steam lines were suspected to have been used by Triple A to transport waste oil containing PCBs from the dry docks to the former oil reclamation ponds in Parcel E. The steam lines are being investigated under the IRP as SI/IR-45.

5.3.12 Air Pollution

Air pollution can be caused by emissions from a variety of sources and is regulated by various criteria. Hazardous air pollutants are defined in the federal and state air quality programs, including federal CAA and the 1990 Amendments, and the California State Implementation Plan. The following sections describe the regulations that address air pollution and the status of air pollution at HPS.

5.3.12.1 Air Pollution Regulation

Air pollution generated by stationary sources in the San Francisco Bay Area is regulated by the air pollution rules and regulations of BAAQMD with authority delegated by the California Air Resources Board and EPA. The Navy currently holds no BAAQMD air permits at HPS. All of the Navy's previously existing air permits have been cancelled. Existing tenants at HPS are responsible for compliance with BAAQMD air pollution permits and regulatory requirements.

5.3.12.2 Air Pollution Program Status and Air Sampling Investigations

The air pollution program at HPS consists of components addressed within the IRP and compliance programs. Activities under the compliance program consist of existing air permits and associated activities, while the IRP activities consist of ambient air sampling conducted in conjunction with the RI/FS.

Under the compliance programs, EFA West held the following air permits issued by BAAQMD for HPS with air permit source number, District Plan No. 1133, as follows:

- S-1 Boiler for Space Heating

- S-119 Dry Dock 3 Paint System
- S-120 Dry Dock 3 Sandblasting Equipment
- S-121 Dry Dock 4 Paint System
- S-122 Dry Dock 4 Sandblasting Equipment
- S-123 Boiler for Space Heating

The emission sources associated with these permits were not used for a period longer than five years. According to BAAQMD Regulation 2, Rule 4, therefore, the potential emission reduction credits are no longer available for these emission sources. The Navy determined it did not need the permits to support current needs and terminated its remaining air permits in mid-1997.

Ambient Air Investigations

Five ambient air sampling investigations have been conducted under the IRP. The five initial investigations were (1) limited air sampling of four areas in 1987; (2) an air sampling investigation to assess air quality in HPS landfill areas from 1988 to 1989; (3) facility-wide air sampling conducted in 1992 (Phase I); (4) facility-wide air sampling at 17 locations for concentrations of asbestos, formaldehyde, metals, SVOCs, and VOCs conducted in 1994 (Phase II); and (5) air monitoring in Parcel E to verify elevated concentrations of asbestos, metals, PCBs, and VOCs were from non-HPS sources (Phase III).

The limited air sampling conducted in 1987 focused on two IRP sites and two proposed housing sites near the main gate at HPS. The air samples were analyzed for asbestos, PCBs, VOCs, SVOCs, and metals. The only detections of significance were metals within Building 123 in IR-10. In the remaining sites, contaminants were either nondetected or detected at very low levels.

The landfill investigation conducted in 1988 and 1989 consisted of what is called a solid waste air quality assessment, which the State of California requires for all landfill areas. The sites investigated at HPS included IR-01, IR-02, IR-03, IR-07, IR-12, IR-14, and IR-18. The assessment was required to determine whether there were any gases in the landfill or sediments, surface gas emissions, or subsurface migration of gases. The gases were analyzed for a wide range of contaminants (for example, from solvents to toluene, xylene, and methane). Surface gas emissions were not detected in the investigation. The only compounds detected were in the ambient air and detected upwind from possible off-site sources in the surrounding industrial areas. Methane was detected in isolated pockets at the Industrial Landfill (IR-01),

former oil reclamation ponds (IR-03), and within the disposal trench at IR-12. The only subsurface migration of methane observed was next to the FUDS at the northern edge of IR-01 (near Buildings 830 and 831).

Since workers at HPS were dispersed around the facility and the local community was located upwind and topographically higher than HPS, the facility-wide air sampling conducted in 1992 was conducted at 12 locations. This air sampling was known as Phase I. The samples were analyzed for asbestos, VOCs, SVOCs, PCBs, pesticides, metals, and formaldehyde. The highest concentrations of asbestos and pesticides were detected upwind, originating from industrial areas around HPS. Low levels of VOCs were found site-wide; the highest concentrations of VOCs were detected at IR-09. The VOCs at IR-09 are thought to have originated from an on-site tenant using solvents.

As a result of the 1992 Phase I air sampling, additional sampling was conducted in 1994 known as Phase II. Phase II air sampling went beyond the screening level of the previous sampling by focusing on the areas of HPS thought to be the most contaminated. Phase II was designed to estimate the baseline emissions of air toxics at HPS. Testing was performed to determine the concentrations of asbestos, formaldehyde, metals, SVOCs, and VOCs in ambient air at 17 locations in HPS.

The general conclusion of the Phase II ambient air sampling was that air-contaminated concentrations at HPS were similar to Bay Area regional air quality monitoring, with only minor differences observed for most analytes investigated. During the Phase II ambient sampling, a sandblast waste pile was sorted in and removed from Parcel E. Results of the sampling showed that sites in close proximity to this sandblast waste pile had elevated levels of asbestos, metals, and PCBs, and that these elevated concentrations were related to this removal. In addition, elevated VOC concentrations in IR-01/21 may have been influenced by a light industrial park located upwind of the monitoring location. As a result, additional sampling was recommended to verify that the elevated concentrations were from non-HPS sources.

The Phase III ambient air sampling conducted in 1996 focused on the previously sampled air monitoring locations (from the Phase II air sampling), all located in Parcel E. The Phase III ambient air sampling concluded that the removal action of the sandblast waste pile in 1994 in Parcel E most likely contributed to the elevated concentrations previously detected, since the concentrations of metals, asbestos, and VOCs detected in the Phase III sampling are similar to regional background concentrations. In addition, the elevated VOC concentrations measured near IR-01/21 in the previous sampling were not detected during the Phase III investigation.

Indoor Air Sampling/VOCs in Groundwater

Samples collected from groundwater underlying HPS contain several VOCs. Under reuse scenarios, it is possible that these VOCs could diffuse into soil gas from the groundwater, be transported through pore spaces within subsurface soil, and enter buildings through cracks and openings in building walls and floors. Consequently, building residents could be exposed to VOCs in indoor air through inhalation.

In January and February 1996, an indoor air quality investigation was conducted to obtain data on the air quality in 10 buildings at HPS that are located over or adjacent to the areas where groundwater was found to contain VOCs. The 10 buildings are located in Parcels B, C, D, and E, as follows: Parcel B - Building 134 (which is now in Parcel C); Parcel C - Buildings 217, 231, 241, 251, 258, 272, and 281; Parcel D - Building 411; and Parcel E - Building 406. The air quality monitoring effort measured the concentrations of VOCs inside the buildings in the breathing zone (measured at 5 feet above the floor level) and the surface VOC emission rates from the floors of the building (measured at the dirt below the concrete floors through a hole cut in the floor). VOCs in whole air samples were measured from the breathing zone and isolation headspace chamber measurement (at floor level) with SUMMA™ canisters. The air samples collected were analyzed for all VOCs using gas chromatography/mass spectroscopy in accordance with EPA Method TO-14.

All of the samples collected from the other buildings either did not contain detectable concentrations of VOCs or contained VOC concentrations below the PRGs for ambient air quality. In most of these buildings, samples collected at the breathing zone contained detectable concentrations of VOCs, but their presence is most likely due to chemicals either being used by current tenants or present in open containers or sumps left inside the building by previous tenants. (Subsequent to this sampling event, the open containers or sumps left inside the building by previous tenants were either cleaned out or removed, and wastes were properly disposed of by the Navy.) In Building 251, no obvious sources, such as open containers or sumps containing materials, were observed to account for VOC concentrations detected in the breathing zone; however, like the other buildings, the floor sample collected contained VOC concentrations below EPA's PRGs for ambient air quality. Samples were collected at the breathing zone that did contain VOCs at concentrations that exceeded the PRGs, but the PRGs are based on exposure for 24 hours per day, for 350 days per year, over a 30-year period, and assume that all of the air inhaled is contaminated, making this criterion (the PRGs) extremely conservative.

The HHRAs conducted for each parcel used this indoor air data to evaluate the risk to determine the need for remedial action. The HHRAs found that for current tenants (light industrial use), no significant risk exists based on the current usage. However, several of the sites are proposed for remedial action because of the potential risks associated with future use.

To further evaluate any potential risk, the Navy is investigating the possibility that vinyl chloride and other gases are present in the soil under or adjacent to Buildings 134, 231, 251, 272, 281, and 406, and is conducting a treatability study to evaluate methods of addressing VOCs in groundwater. The results of this study will indicate (1) whether a particular building is available for immediate reuse, or (2) if a building is currently occupied, whether the tenants would be affected by the cleanup technologies.

The Navy and the EPA are currently discussing the results of the treatibility study. The results of the treatability study are presented in the draft final Parcel C FS published in July 1998. All issues dealing with the treatibility study will be resolved in the final Parcel C FS due in late-1998.

5.3.13 Noise Control

Major noise sources at HPS are roadways, trains, and industry. During the ambient noise survey conducted at HPS in 1986 (Navy 1986), the acoustic environment of HPS was shown to be dominated by noise from ground transportation, air transportation, and ship repair activities. The contribution of ground transportation noise was greater during the evening rush hour, roughly 3:00 p.m. to 4:00 p.m. Ground transportation at the site was predominantly automotive, with a small percentage of medium and heavy trucks. Most of the ground traffic is directly related to present tenants. Major sources of ground transportation noise are the shipyard thoroughfares: Fisher Avenue, Robinson Street, Galvez Avenue, Donahue Street, and Innes Avenue. Decreased activity at the site subsequent to Triple A's departure from the base in 1986 has reduced ambient noise levels below those defined during the 1986 survey.

Shipyard activities have been the principal contribution to the acoustic environment of HPS. Until 1987, the bulk of the HPS activities were concentrated in the area of Dry Docks 2 and 3 (Parcel C). With the termination of Triple A's lease and the cessation of its operations, the present noise environment is quieter than in recent times. Dry Docks 2 and 3 have not been in operation since 1987. When in operation, sandblasting of dry-docked vessels and crane movement were intermittent noise sources. On-site heavy equipment generated impulse noise, while other operations, such as compressed air generation, combined

to produce constant background noise. Intermittent testing formerly conducted at the West Coast Shock Testing Facility and Westinghouse Surface Test Launch Facility also contributed to the noise at HPS.

Commercial air traffic originating from San Francisco International Airport, located 7 miles south of the site, generates Community Noise Equivalent Levels (CNEL) of less than 65 decibels (dB) in the HPS area (CCSFPD 1992). Private civilian aircraft and military aircraft flyovers also generate noise, but to a much lesser degree.

Former private residences were present on the hilltop bordering HPS in the area of Coleman Street, Friedell Street, Jerrold Avenue, and Innes Street. These residences were shielded from the shipyard noise generated at Dry Docks 2, 3, and 4 by intervening topography. The vacant Bachelors' Enlisted Quarters (Building 600) within Parcel E was shielded from shipyard noise by distance (Navy 1986). Current land use at HPS is limited to industrial, commercial, and mixed use.

5.3.14 Ordnance Operations

In the Twelfth Naval District, where HPS is located, the loading and discharging of cargo ammunition and high explosive items of ships allowances was performed only at designated Naval ordnance facilities or explosive anchorages. Ships scheduled to undergo repair or overhaul at HPS were all relieved of their ammunition and explosives, except for permissible small arms ammunition, before entry into the waters near the shipyard (NEESA 1984).

Prior to 1974, two facilities at HPS were designated as explosive storage structures: a Small Arms Magazine located near Building 813, and an Explosive Storage Magazine located near the shoreline on the southeast side of HPS. The Small Arms Magazine, a metal locker covered in dirt, is not currently used for this function, and the Explosive Storage Magazine was demolished (NEESA 1984). No explosive or ordnance facilities are currently in operation at HPS.

5.3.15 Radiological Operations

HPS was a center of shipbuilding and ship repair during World War II. Pure and applied radiological research also played a major role in HPS's history. In 1948, a group of scientists at HPS formed the NRDL, whose mission was to study the effects of nuclear weapons and to develop from them effective countermeasures against radiation. HPS was selected as the preferred West Coast site for NRDL due to its proximity to the University of California (UC) Crocker Radiation Laboratory and other Navy facilities,

and its dry dock capacity. NRDL activities required a cyclotron, a Van de Graaff generator, X-ray machines, radiological laboratories, support offices, and kennels for animals used in radiological studies.

In late 1946, a small group of personnel, comprised of UC and Navy scientists, was tasked with identifying methods to decontaminate ships that had returned from nuclear weapons tests near Bikini Atoll in the Marshall Islands, known collectively as Operation Crossroads. In 1951, the NRDL became a separate Navy command. To support its mission to study the effects of nuclear weapons and to develop countermeasures to nuclear weaponry, staffing of NRDL-related activities increased to more than 100 military and almost 600 civilian personnel (NEESA 1984).

During the early years of the NRDL, and until about 1955, its operations were conducted throughout HPS. The former NRDL buildings and sites are located within four areas in Parcels B, C, D, and E.

A number of radiological research projects were conducted at HPS. These projects studied the decontamination of ships, and the chemical, physical, and biological aspects of the consequences of radioactive fallout (NEESA 1984). Radioactive wastes on the shipyard were containerized in 55-gallon drums, encased in concrete, and sunk to a depth of 500 to 1,000 fathoms approximately 50 miles west of HPS in the Pacific Ocean. Approximately 150 drums per year were disposed of in this manner from 1950 to 1959 (NEESA 1984). Ocean disposal of radiological waste ceased in 1959, and between 1960 and 1969 HPS radioactive wastes were hauled off site by contractors to licensed disposal sites. In 1969, all radiological research activities ceased at HPS (NEESA 1984).

Radiological work at HPS is assessed in one of two Navy programs: the Naval Nuclear Propulsion Program, and the General-Radioactive Material Program. The Naval Nuclear Propulsion Program establishes and enforces standards and regulations for radiological work associated with nuclear-powered ships. The Navy's General-Radioactive Material Program involves facilities and equipment that have been used for radiological work not associated with the Naval Nuclear Propulsion Program.

5.3.15.1 Naval Nuclear Propulsion Program

The Naval Nuclear Propulsion Program controls the facilities and equipment necessary to perform nuclear-powered warship work. Facilities are surveyed to assess whether nuclear-powered warships, during construction, maintenance, overhaul, or refueling, had an adverse radiological impact on the environment. At HPS, records indicate the Naval Nuclear Propulsion Program work has not been conducted outside the Dry Dock 4 area (MINS 1994b).

EPA conducted a radiological survey at HPS from September 8 to 16, 1986. The report reached the following five conclusions. First, only radionuclides of natural origin and trace amounts of cesium-137 from previous nuclear weapons testing were detected in the harbor sediment samples. Radioactivity associated with the O&M of nuclear-powered warships was not detected in any of the dredge or core sediment samples. Second, no tritium or gamma-ray emitters, other than trace amounts of those occurring naturally, were detected in surface water from the harbors or in nearby drinking water supplies. Third, gamma-ray emitters, other than trace amounts of those occurring naturally, were not found in harbor algae, mussels, or sea lettuce. Fourth, gamma-ray surveys of the harbors failed to detect any exposure rates elevated significantly above background. Fifth, based on this survey, operations related to nuclear-powered warship activities have contributed no detectable radioactivity to the harbors at HPS. Thus, under present conditions, Naval operations within these harbors pose no radiological health problem to the public (MINS 1994b).

MINS performs a radiological survey similar to EPA's on an annual basis. To date, the surveys have supported EPA's conclusions. A radiological survey was completed following the departure of the last nuclear-powered ship from HPS. That survey confirmed the previous EPA findings that no radioactivity associated with the O&M of nuclear-powered ships was detected (MINS 1994b).

5.3.15.2 General-Radioactive Materials

General-radioactive materials include radiographic sources used for nondestructive testing, radiological sources used for instrument calibration, electrical instruments containing radiological sources, and radium illumination dials and gauges. Areas potentially contaminated with such radioactive sources were studied as part of the IRP (MINS 1994b).

Radioactive Material License Termination

On April 25, 1969, the Navy announced the disestablishment of NRDL, with a closure date of about December 31, 1969. A part of the disestablishment of the NRDL was the termination of the radioactive material licenses issued to the Navy by AEC, and later by the U.S. Nuclear Regulatory Commission (NRC). Radioactive materials were licensed by the AEC under Byproduct Material License Nos. 04-00487-03, 04-13488-01, and 04-00487-09. The Navy also held a source material license (License No. SNB-376) allowing possession of natural uranium and thorium.

The fifth license held by the Navy was a Special Nuclear Material License (License No. SNM-00035), which authorized possession of plutonium and other radionuclides, was terminated when the NRDL closed. The NRC undertook the review of over 31,000 previously terminated radioactive materials licenses throughout the U.S. The purpose of the review was to confirm documentation to show that licenses terminated before 1985 were terminated in accordance with current NRC criteria. The NRC concluded in 1995 after a search of its records, along with site surveys where necessary, no concerns remain of any residual contamination from licensed operations at the NRDL.

5.3.15.3 Radiation Investigations Under the IRP

Radiation investigations at HPS have been performed as part of the IR program in three phases. Phase I consisted of a surface confirmation radiation survey (SCRS) that included air and soil sampling. Phase II focused on the subsurface distribution of radioactive point sources detected in the top 1 foot of soil during Phase I. The Phase III radiological investigation was implemented to address concerns regarding the former use, storage, and disposal of radioactive material associated with past NRDL operations at HPS.

Phase I included a SCRS, surface soil sampling, and air monitoring. Elevated gamma activity was detected on the surface in areas within Parcels B, D, and E. Elevated gamma count rates at the surface in Parcel B were isolated to a fill slope that was associated with road construction on base. Soil samples within IR-07 and IR-18 identified the source of the elevated activity was due to radium-226 (Ra-226) and the associated daughter products. Based on the results of the surface survey, the Navy recommended characterizing the soil down to 1 foot bgs for radiological constituents in these two sites.

Phase II of the radiation investigation included a subsurface radiation survey within Parcels B (IR-07 and IR-18) and E (IR-01 and IR-02). This phase of the investigation was intended to evaluate source material, and the lateral and vertical extent of the elevated gamma count rates observed during Phase I. The Navy, in coordination with EPA, found that Ra-226 was a naturally occurring radioactive material bound in the mineralogy of the granitic fill material and recommended no further action at the two sites in Parcel B (PRC 1995b).

The purpose of Phase III of the radiation investigation at HPS was to address radiological concerns regarding the former use, storage, and disposal of radioactive material associated with past NRDL operations at HPS. The intent of this phase of the radiation investigation was to eventually release all remaining buildings and sites for unrestricted use. The following NRDL buildings were investigated

during the Phase III radiation investigation: Buildings 506(d), 507(d), 508(d), 509(d), 510(d), 510A(d), 517(d), and 529(d); Building 707 concrete drum storage pad; Building 351A; and the low-level radioactive waste storage tank vault behind Building 364.

Phase III radiation investigation included surface soil sampling and gamma count rate measurements on a 10-foot by 10-foot grid using a Global Positioning System at Buildings 506(d), 507(d), 508(d), 509(d), 510(d), 510A(d), 517(d), and 529(d) and Building 707 concrete drum storage pad. Swipe sampling was performed in Building 351A and an extensive radiation survey was performed at the low-level radioactive waste storage tank vault behind Building 364.

Buildings 351A, 507(d), 508(d), 510(d), and 510A(d) have been recommended for, but have not received, a release for unrestricted use by RASO. Cesium-137 and strontium were detected above release criteria at the low-level radioactive waste storage tank behind Building 364 and further remediation is required. Buildings 506(d) and 529(d) were not recommended for release because of a possible point source behind Building 529(d). The point source will be removed. An anomalous count rate measurement near the upper northeast end of Building 517(d) needs further investigation before Buildings 509(d) and 517(d) can be recommended for release. Cesium-137 and Ra-226 were detected above release criteria at the Building 707 concrete storage pad. Further remediation is required at this site.

5.4 ENVIRONMENTAL ASSESSMENT/INSTALLATION RESTORATION PROGRAM

As a result of increasing national concern over environmental contamination associated with hazardous substance handling and disposal, Congress directed EPA to develop a comprehensive national program to manage past disposal sites. EPA developed this program, which is outlined in CERCLA, in December 1980.

DoD efforts in this area preceded the CERCLA program. In 1975, the U.S. Army developed a pilot program for DoD to investigate past disposal sites at military installations. In 1980, DoD named this program the IRP and instructed the various armed forces services to comply with the program guidelines.

5.4.1 Environmental Program Framework

On January 22, 1992, the Navy, EPA Region IX, and California Environmental Protection Agency (Cal/EPA) signed the original federal facility agreement (FFA) for HPS, which documented the Navy's

intended action and schedule pertaining to environmental investigation and remediation at HPS pursuant to the following authorities:

- Section 120 of CERCLA
- Sections 6001, 8(h), 6, and 4(u) and (v) of RCRA
- NEPA
- The Defense Environmental Restoration Program
- Applicable state laws

The FFA established a procedural framework and schedule for ensuring that the environmental impacts associated with past and present activities at HPS are thoroughly investigated and appropriately remedied to protect human health and the environment. The FFA is also designed to aid in the exchange of information and to ensure the adequate assessment of potential injury to natural resources. Section 6.1 of the FFA requires compliance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), CERCLA guidance and policy, RCRA guidance and policy, Executive Order 12580, and applicable state laws and regulations. Under Section 6.2 of the FFA, the Navy agreed to undertake, seek adequate funding for, fully implement, and report on the following tasks:

- **Conduct PAs/SIs.** PA/SIs are conducted to determine if there is a risk to human health or the environment in areas that have been identified as potentially contaminated with hazardous materials. The PA process involves interviews with facility personnel, reviews of available documentation, and site visits. If further investigation is warranted, the site moves on to the SI phase of investigation. The SI incorporates the findings of the PA and involves the collection of limited samples. The findings are documented in SI reports. If the PA or SI determines that there is little likelihood of risk and EPA and Cal/EPA concur, no further investigation is conducted for that area. If risk is likely, then the site is designated an IR site and is further investigated under the IRP.

- **Conduct RIs.** An RI is the CERCLA-required study of a site where risks to human health and the environment are likely. Such sites were either previously investigated during the PA or SI, or are assumed to potentially pose a risk, thereby bypassing the PA or SI phases of investigation. One of the main purposes of an RI is to characterize the nature and extent of contamination at a site. The RI involves the collection and analysis of soil and groundwater samples. The RI report addresses the nature and extent of contamination and the estimation of risk to human health and the environment by the chemicals found at the site during the SIs and RIs.

- **Prepare FS.** An FS is performed for IR sites where contamination poses an unacceptable risk to human health or the environment, based on data obtained in the RI. Different remedial alternatives that could reduce the risk at the site to acceptable levels are compared. The FS report should supply enough information to accomplish the following tasks: (1) allow remedial alternatives to be compared based on their likely ability to protect human health and the environment; (2) determine the short-term and long-term effectiveness of the remedial alternatives; (3) evaluate the effectiveness of remedial alternatives to bring the site into compliance with environmental regulations; (4) determine the extent to which the alternative will reduce the toxicity, mobility, or volume of contamination; and (5) assess how easily the alternative can be implemented and how much the alternative will cost. FS work is typically conducted concurrently with the RI report. The current HPS parcel-based FS report schedules are shown in Appendix F of this report.

- **Prepare a Proposed Plan (PP).** The PP summarizes the findings of the RI and documents the recommendations of the FS. At this point an agreement on the remedy and schedule for executing the remedy would be documented in a ROD. The ROD will take into account public comments and community concerns and will include the Navy's responses to those comments. In the PP, the Navy will describe its preferred FS alternative as well as other FS alternatives. The current HPS parcel-based ROD schedules are shown in Appendix F of this report.

- **Conduct Remedial Design/Remedial Action/O&M.** The remedies selected in the PP are documented in the ROD and are designed, executed, and maintained. For example, these remedies or response actions may include source removals, treatment of contaminated soil and groundwater, capping of soil, or groundwater monitoring.

Under Section 8.1 of the FFA, all parties agreed to the deadlines set forth in the FFA for RI and FS reports, PPs, and the ROD, for each parcel at HPS. Enforceable FFA schedules are currently under discussion. Appendix F contains current revisions as of April 1998.

HPS has completed the PA/SI investigations for Parcels B through E and is currently in the RI/FS phase of investigation. To date, SI and RI reports have been prepared for Parcels B through E. FS reports have been prepared for Parcels B through F. See Appendix F for current-version due dates for RI and FS reports not yet final. The Parcel A RI report and decision documents have been completed. The Parcel A ROD, a no further action decision, was signed by all parties on November 29, 1995. The Parcel B RI/FS reports and decision documents have been completed. The Parcel B ROD was signed by all parties on October 7, 1997. The remedial action documents for Parcel B have been completed and remedial actions are upcoming at Parcel B. A Parcel D ROD has been submitted, but is not yet signed.

5.4.2 History of Environmental Programs at Hunters Point Shipyard

In response to DoD's request to investigate past disposal practices at military installations, the Navy developed the Navy Assessment and Control of Installation Pollutants (NACIP) Program to identify and control environmental contamination from past use and disposal of hazardous substances at Naval and Marine Corps facilities. This program consisted of three phases: (1) the IAS, (2) the confirmation study, and (3) remedial action.

In Phase 1, the IAS identified disposal sites and contaminated areas caused by past hazardous substance storage, handling, or disposal practices at Naval facilities. Each disposal site identified in the IAS was then evaluated with respect to its threat to human health or the environment. The IAS included record searches, on-site surveys, a confirmation study ranking system, and site ranking. At the conclusion of the IAS, a potential site was then recommended for either a confirmation study, mitigating action, or no further action.

In Phase 2, the confirmation study, each disposal site underwent a verification and, if necessary, a confirmation step. During the verification step, disposal sites that were recommended in the IAS would undergo analytical testing of environmental samples and monitoring to determine whether hazardous substances were present in such quantities as to pose a threat to human health and the environment. If required, the confirmation phase would provide more information concerning the horizontal and vertical distribution of the contaminants present at the site. These steps would verify and characterize the extent of the contamination present and provide additional information about the migration pathways. At the conclusion of this phase, the sites were then evaluated for remedial action. The remedial actions conducted during Phase 3 would provide the corrective action necessary to eliminate or mitigate the threats to human health or the environment.

On July 5, 1983, the CNO issued a letter authorizing approval for HPS to conduct an IAS. NEESA was responsible for the program's IAS in coordination with NAVFAC Engineering Field Division. By October 1984, the IAS for HPS was completed.

5.4.2.1 NACIP Phase 1: IAS

The IAS identified 12 sites at which hazardous wastes were spilled or disposed. Each of these sites was then assessed with regard to contamination characteristics, migration pathways, and pollutant receptors. The IAS concluded that six of the 12 sites identified posed a threat to human health or the environment

and warranted a confirmation study, while three sites warranted corrective action, and the remaining three sites required no further action. The following is a list of the 12 IAS sites along with the recommendations for each site.

IAS Site Number	Site Name	Recommendation
59-1	Former Oil Reclamation Ponds	Confirmation study
59-2	Burning Disposal Site	No further action
59-3	Industrial Landfill	Confirmation study
59-4	Abandoned 55-Gallon Drums	Mitigating action
59-5	Scrap Yard	Confirmation study
59-6	Old Transformer Storage Yard	Confirmation study
59-7	Building 521, Power Plant	Mitigating action
59-8	PPY	Mitigating action
59-9	Bay Fill	Confirmation study
59-10	Tank Farm	No further action
59-11	Battery and Electroplating Shop	Confirmation study
59-12	Bay Sediment	No further action

5.4.2.2 NACIP Phase 2: Confirmation Study

A short time after the IAS, an additional site, the Sub-Base Area, was added to the six confirmation study sites. The Sub-Base Area is located in the northeast portion of HPS and contains three distinct subsites: (1) the Sandblast Fill Area, (2) the Painting Area, and (3) Additional Areas.

During February 1986, the Navy met with representatives of the RWQCB, the California Department of Health Services (DHS), and EPA to discuss the first part of the confirmation study, the verification step plan of action. At this meeting, the number of sites to be investigated under the confirmation study/verification step was increased from seven to 11. Three of the four sites that were added were recommended for mitigating actions in the IAS (IAS sites 59-7, 59-8, and 59-10), while the remaining site (IAS site 59-12) was recommended for no further action in the IAS. As a result of these additions, 10 of the 12 sites identified under the IAS were carried through to the confirmation study/verification step, and an additional site, identified at the Sub-Base Area, was also added. The following is a list of the IAS site numbers and names.

IAS Site Number	IAS Site Name
59-1	Former Oil Reclamation Ponds
59-3	Industrial Landfill
59-5	Scrap Yard
59-6	Old Transformer Storage Yard
59-7	Building 521, Power Plant
59-8	PPY
59-9	Bay Fill Area
59-10	Tank Farm
59-11	Battery and Electroplating Shop
59-12	Bay Sediments
Sub-Base Areas (discovered after IAS)	

5.4.2.3 NACIP Confirmation Study/Verification Step

The following is a brief overview of the investigations conducted at each site and the associated recommendations.

IAS Site 59-1: Former Oil Reclamation Ponds

The former oil reclamation ponds contained high levels of VOCs, SVOCs, and petroleum-related compounds. The concentrations of these constituents increased with depth to the water table. One soil boring contained elevated levels of PCBs from a sample collected below the water table. Copper and lead were also present in soil at the site and exceeded the soluble threshold limit concentration (STLC) values by a factor of 10; however, these and other metals present in the groundwater were not considered hazardous (EMCON 1987).

The confirmation study/verification step report stated that the site does not pose a human health risk because there is no immediate risk of direct exposure. The report recommended periodic monitoring of the groundwater for VOCs, SVOCs, and PCBs to protect the marine environment. This site is part of what is currently known as IR-03.

IAS Site 59-3: Industrial Landfill

The Industrial Landfill contained a variety of VOCs and SVOCs associated with petroleum products. The presence of chlorinated organic solvents, PCBs, and metals was also encountered at the site. VOCs,

SVOCs, PCBs, chlorinated organic solvents, copper, zinc, and lead were present in soil samples and considered to be at hazardous levels. The groundwater sampled at the site contained chlorinated solvents that exceed the hazardous threshold, but metals encountered in groundwater samples did not exceed the hazardous threshold (EMCON 1987).

The confirmation study/verification step report recommended further investigations to define the vertical and horizontal extent of contamination. The report was also recommended screening groundwater at the site for gross alpha and beta particles along with a gamma radiation scan. This site is currently known as IR-01/21.

IAS Site 59-5: Scrap Yard

Metals and PCBs were detected at the scrap yard; however, the concentrations of these constituents were below the hazardous threshold (EMCON 1987). The confirmation study/verification step report stated that there was no surface contamination present and, as a result, there was no immediate risk of exposure to contaminants at the site. The confirmation study/verification step report recommended collecting an additional sample from one soil boring and analyzing it for leachate solubility using the WET procedure for lead (SW846 method 7421). This site is currently referred to as IR-04.

IAS Site 59-6: Old Transformer Storage Yard

Of the 19 samples collected at this site, only two contained PCBs. The concentrations of PCBs detected were determined to be nonhazardous (EMCON 1987). No specific recommendations were made for this site, which is currently referred to as IR-05.

IAS Site 59-7: Building 521 – Power Plant

Air samples collected at this site were analyzed for the presence of asbestos fibers. The results indicated that the building had not contributed to an increase in the presence of airborne asbestos. As a result, there was no immediate threat to human health or the environment from airborne asbestos. The report recommended that the asbestos present at the site be removed and disposed of properly (EMCON 1987). Building 521 is being investigated as part of the site currently referred to as IR-11.

IAS Site 59-8: Pickling and Plate Yard

Arsenic, chromium, copper, lead, thallium, and zinc were detected in the grab soil samples collected at the PPY. Lead was the only constituent in the soil that exceeded the hazardous threshold. The residue found on structures at the PPY was determined to contain hazardous levels of chromium, lead, and zinc.

The confirmation study/verification step report recommended disposal of the materials found in the PPY as hazardous waste. This disposal included the removal and disposal of contaminated aboveground structures (from overspray), along with the contents of the pickling tanks, sumps, and pits. The report also recommended further subsurface investigations for metal contamination in soil and groundwater (EMCON 1987). This site is currently referred to as IR-09.

IAS Site 59-9: Bay Fill Area

The analytical results for the Bay Fill Area were similar to those for the Industrial Landfill. The levels of copper detected in soil borings exceeded the TTLC. The metals detected in groundwater did not exceed the hazardous threshold (EMCON 1987).

The confirmation study/verification step report recommended defining the vertical and horizontal extent of VOCs, SVOCs, and copper and performing a risk assessment for the VOC and SVOC contamination (EMCON 1987). This site is currently referred to as IR-02.

IAS Site 59-10: Tank Farm

Soil samples were collected from hand-auger excavations. It is unknown if these samples were sent to a laboratory for analysis. The confirmation study/verification step report indicated that the soil encountered was a sandy clay, but did not contain analytical results for the samples. The report recommended collection of additional soil samples and analysis for petroleum constituents along with physical testing (permeability, density, and classification). The report recommended advancing two borings downgradient and one upgradient of the tank farm to determine the thickness of the fill material and to locate the underlying bedrock (EMCON 1987). This site is currently referred to as IR-06.

IAS Site 59-11: Battery and Electroplating Shop

Floor scrape samples were obtained from this shop and analyzed for metals. Hazardous levels of cadmium and lead were detected in the floor scrape samples, as well as potentially hazardous concentrations of copper.

The confirmation study/verification step report recommended disposal of the floor in the Battery and Electroplating Shop (Building 123) as hazardous waste and conducting further investigations of the subsurface soil; additional soil samples should be analyzed for metals and pH (EMCON 1987). This site is currently referred to as IR-10.

IAS Site 59-12: Bay Sediments

The confirmation study/verification step report identified three areas of potential contamination of Bay sediments. These areas are the sewer outfall locations in the areas of Berths 60 and 64 and at the south end of Mahan Street. The report recommended advancing soil borings in these areas and collecting samples to determine if the Bay sediments were contaminated by the activities at HPS. Bay sediments are currently being investigated as part of the Parcel F (offshore property) investigation.

Sub-Base Areas

Low levels of VOCs and SVOCs were detected in the samples collected from soil borings advanced in the painting and sandblast fill areas. The contaminants appeared to be related to petroleum products and diesel randomly distributed throughout the site.

Lead exceeded the hazardous threshold at the sandblast fill area. Levels of copper, lead, and nickel were detected at both the painting and sandblast fill areas, and exceeded 10 times the STLC. However, the analytical results of the groundwater samples indicated nonhazardous levels of these constituents (EMCON 1987). This site is currently referred to as IR-07.

5.4.2.4 Triple A Sites

The Navy leased portions of HPS to Triple A. Triple A leased the shipyard from the Navy from July 1, 1976 through June 30, 1986.

On December 31, 1985, the Navy informed Triple A by letter that it was interested in leasing a portion of the property originally leased to Triple A. The subsequent negotiations, conducted in an effort to enter into a new lease for a portion of the originally leased property, created no right by Triple A to possession of HPS beyond June 30, 1986.

On June 18, 1986, the Navy informed Triple A by letter that it was initiating action to operate the HPS facility itself and requested an orderly transition effective July 1, 1986. The Navy also informed Triple A that it would be taking over the security operations at HPS.

On July 24, 1986, the Navy petitioned the court for an order declaring the Navy's right to immediate possession of the property, removing Triple A from the property, and awarding the Navy reasonable rental for the period of Triple A's possession of the property subsequent to June 30, 1986.

During civil proceedings, the Navy identified 19 sites that were alleged to have been used by Triple A to store and/or dispose of hazardous waste and other wastes. The following is a listing and a description of those sites. These sites have been referred to as the "Triple A Sites" in subsequent investigations.

- Triple A Site 1: South end gate of former "Pick Your Parts" business; cow pasture: barrels and drums, no labels - contents unknown
- Triple A Site 2: South-southwest shoreline of HPS, adjacent to cow pasture: industrial debris, paint cans, wire insulation, possible asbestos
- Triple A Site 3: Area enclosed by fencing; Building 702 and salvage yard; Building 807 and scrap yard; Building 810 and lay-down area: barrels, batteries, wire insulation, possible asbestos lagging, oil, and chemicals draining into storm drains
- Triple A Site 4: South fenced area outside Building 702: 55-gallon drums crushed on concrete slab and surrounding area, contents spilled onto dirt, barrels and paint cans buried and sticking out of dirt
- Triple A Site 5: Old Commissary area: drums containing liquids and oily dirt pile that has been removed
- Triple A Site 6: "J" Street south of Building 505: barrels that have been removed
- Triple A Site 7: Open area between Buildings 505 and 512, east: oily waste, salvage waste drained and dumped into gully area covered by sand; sludge is about 1 inch thick

- Triple A Site 8: Open area between Manseau and Mahan Streets, north of Building 505: oily sawdust, rust, and industrial sand piles
- Triple A Site 9: Old transformer lot at the corner of 11th and Mahan Streets: barrel containing old rags that was subsequently labeled "PCB's"; other old barrels and cans
- Triple A Site 10: Outside SOAP team lot at "J" Street, west of Building 526: a line of barrels, the last one marked "PCB"; barrels have been removed
- Triple A Site 11: Next to Site 10: additional barrels
- Triple A Site 12: Open area, north directly behind Building 521; open area west of Building 521: dumpster containing circuit boards, acid boards, copper-etching plates, X-ray plates, and a tank used as an incinerator
- Triple A Site 13: Tank S-505; tank berm, area south behind Building 521; open area west of Building 521: April 1986, discovered hoses marked "Triple A" connected to pump running across the road, pumping oily waste into ponds
- Triple A Site 14: Open area between the ends of Spear and 6th Avenues: materials from the disposal of a building and merchant boat materials, similar to Site 2, and acid tank roofs
- Triple A Site 15: Old commissary store pad (next to Site 5): sandblasting waste; Triple A called IT to clean it up
- Triple A Site 16: Open area south of Buildings 809 and 830: landfill of industrial debris now under about 12 feet of top soil, slimy and wet, asphalt and cement
- Triple A Site 17: Open beach area south-southwest of "K" Street and east-southeast of Building 600: industrial sand and asphalt, some liquids
- Triple A Site 18: Shoreline directly south of and adjacent to Building 600: buried furniture and fiberboard, paint cans and asphalt
- Triple A Site 19: Baseball diamond behind Building 600: oily waste in the center of the baseball field

5.4.2.5 Remedial Action Order

On January 7, 1985, DHS issued a remedial action order (RAO) to the Navy and Triple A. The order was a result of DHS's determination that there had been releases or threatened releases of hazardous substances at HPS and that the releases constituted a public nuisance.

The RAO described the storage and disposal of hazardous substances prior to July 1, 1976 (when HPS was in the Navy's possession), and the generation, storage, and disposal of hazardous substances and wastes after July 1, 1976 (when HPS was in Triple A's possession). The RAO listed the 11 sites investigated in the confirmation study/verification step report and the 19 Triple A sites identified during the civil proceedings against Triple A.

The RAO listed an additional site where PCB contamination was found, near Building 503. This area was discovered in September 1986, during construction work near Building 503. The initial results showed PCB concentrations as high as 910 ppm in the soil. By the date of the RAO, the Navy had implemented a source removal action to remove soil with PCB concentrations higher than 25 ppm.

The RAO also provided additional information on the types of contamination found at the Sub-Base sandblast fill and painting areas. In addition to the heavy metal contamination of soil at this site, limited soil samples indicate the presence of aromatic hydrocarbons.

Scoping Document

In response to DHS's RAO, the Navy completed preparation of scoping document for the RI/FS to be conducted at HPS. The main purpose of the scoping document was to:

- Summarize the previous activities and investigations that have been conducted at HPS
- Describe the ongoing or planned investigations at HPS, and how they will relate to the RI/FS process
- Describe the Navy's approach to investigating and remediating these sites
- Describe the field investigations that will be conducted as part of the RI
- Describe additional tasks (for example, public health and environmental evaluations, initial screening of remedial technologies, and community relations) that will be conducted as part of the RI/FS process

The scoping document covered 10 of the 11 sites that were identified during the IAS and the confirmation study/verification step report, along with the 19 Triple A sites. IAS Site 59-12, Bay Sediments, was not recommended for investigation at this point. The Navy conducted a RI/FS on these IAS sites in accordance with applicable state and federal laws and regulations (HLA 1988).

The 19 Triple A sites were identified in the Navy's "Civil Complaint for Ejectment and Writ of Possession" and in DHS's RAO. These Triple A sites required further investigations by both the San Francisco District Attorney's (SFDA) office and the Navy. Ten of the Triple A sites were encompassed by five of the NACIP sites, while the remaining nine Triple A sites were separate sites at HPS.

Within the scoping document, the NACIP and Triple A sites were combined, where appropriate, and renumbered as IR or PA sites. Sites IR-01 through IR-11 included 10 NACIP sites and the Building 503 PCB spill site, and incorporated those Triple A sites that fell within their boundaries. Site PA-12 through PA-18 represented single or multiple Triple A sites. The following is a list of the renumbered sites along with a description of the sites.

RI/FS Sites	Site Description
IR-01	IAS Site 59-3: Industrial Landfill and Triple A Sites 1 and 16
IR-02	IAS Site 59-9: Bay Fill Area and Triple A Sites 2, 13, 14, 17, 18, and 19; excludes IR-03 (Site 13 lies partially outside the Bay Fill Area)
IR-03	IAS Site 59-1: Former Oil Reclamation Ponds and part of Triple A Site 17
IR-04	IAS Site 59-5: Scrap Yard and Triple A Site 3, north of Spear Avenue
IR-05	IAS Site 59-6: Old Transformer Storage Yard
IR-06	IAS Site 59-10: Tank Farm
IR-07	IAS Sub-Base Area
IR-08	Building 503, PCB Spill Area
IR-09	IAS Site 59-8: PPY
IR-10	IAS Site 59-11: Battery and Electroplating Shop
IR-11	IAS Site 59-7: Building 521, Power Plant

Potential RI/FS Sites	Description
PA-12	Parts of Triple A Sites 3 and 4, south of Spear Avenue
PA-13	Parts of Triple A Sites 5, 6, 8, and 15
PA-14	Parts of Triple A Sites 6 and 7
PA-15	Triple A Site 12 and part of Triple A Site 13
PA-16	Triple A Site 9
PA-17	Triple A Sites 10 and 11
PA-18	Unnumbered site behind Dago Mary's

The Navy conducted a RI at IR-01 through IR-11 and a SI at PA-12 through PA-18. Because of the complexity of HPS and the various chemicals that might be present at an IR site, the Navy investigated each IR and PA site separately. To speed up the IR and PA processes and to help meet the reporting requirements, the individual IR sites were combined into operable unit (OU) groups. Sites were grouped based on the evaluation of potential threats to human health and the environment. OU is a CERCLA term that describes areas with similar conditions and contaminants that might have similar remediation techniques. The following is a listing of the IR site OU groupings as presented in the scoping document.

Group I

IR-01 Industrial Landfill and Triple A Sites 1 and 16
IR-02 Bay Fill Area and Triple A Sites 2, 13, 14, 17, 18, and 19
IR-03 Former Oil Reclamation Ponds and Triple A Site 17

Group II

IR-06 Tank Farm
IR-08 Building 503, PCB Spill Area
IR-09 PPY
IR-10 Battery and Electroplating Shop
IR-11 Building 521, Power Plant

Group III

IR-04 Scrap Yard and Triple A Site 3, north of Spear Avenue
IR-05 Old Transformer Storage Yard

Group IV

IR-07 Sub-Base Area

In addition to the IR and PA sites, the Navy also investigated other areas at HPS that may have posed a threat to human health or the environment. These sites were identified as "Other Areas" in the scoping document, as Study Areas A and B. Study Areas A and B investigations consisted of investigating oil contamination at potential construction sites. These investigations were conducted during 1986 and 1987 by EMCON. The investigations were limited to areas where emplaced fill was present outside the sites where contaminants had previously been identified. Generally, Study Area A is located within Parcels D and E, and Study Area B is located within the southeastern portion of Parcel D and Parcels A and B.

5.4.3 Preliminary Assessments

In November 1989, HLA reported the results and recommendations of the PA for sites PA-12 through PA-18 (HLA 1989c). The following is a list and a brief description of each of these PA sites:

Site Name	Site Description
PA-12	Disposal Trench and Salvage Yard (comprised of Triple A Sites 3 and 4)
PA-13	Old Commissary Site (comprised of Triple A Sites 5, 6, 8, and 15)
PA-14	Oily Liquid Waste Disposal Site (comprised of Triple A Sites 6 and 7)
PA-15	Oily Waste Ponds and Incineration Tank (comprised of Triple A Sites 12 and 13)
PA-16	Container Storage Area (comprised of Triple A Site 9)
PA-17	Industrial Debris Zone (comprised of Triple A Sites 10 and 11)
PA-18	Waste Oil Disposal Area (unnumbered Triple A site)

All PA sites were advanced into the IRP. All of these sites subsequently became IR sites as detailed in Table 5-1. A more detailed description of these IR sites is in Appendix G of this report.

5.4.4 Site Inspection Sites

A site-wide inventory was conducted in 1990 for HPS to identify sites that previously were inadequately assessed. These sites included buildings, utility lines, equipment that contained PCBs, and other sites designated as potentially contaminated. A PA was conducted and 40 sites, PA-19 through PA-58, were recommended for SI work.

The following reports contain the results of the SI phase: "Draft Final Parcel A Site Inspection Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California" (PRC 1993a); "Draft Final Parcel B Site Inspection Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California" (HLA 1994b); "Draft Final Parcel C SI Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California" (PRC 1994d); "Draft Final Parcel D Site Inspection Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California" (HLA 1994e); and "Draft Final Parcel E Site Inspection Report, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California" (HLA 1994f). All of the sites that advanced into the RI phase are described in the following section and are described in more detail in Appendix G of this report.

5.4.5 Installation Restoration Sites

The main goal of the IRP at HPS is to identify AOCs, and perform the required cleanup action so that the property can be transferred to the City of San Francisco. Following the initial RI, the use of OUs was found to be unworkable. The initial assumption that each OU could be completely characterized independent of adjacent sites was proven impractical. With OUs, problems could not be resolved that resulted from multiple sites with diverse contaminants in conjunction with utilities (for example, storm lines and sanitary sewers) serving both as contaminant sources and pathways. Under the original FFA, the Navy's intent at this time was also to keep HPS as an active Naval facility. The focus was subsequently changed to expedite the restoration and transfer of HPS for reuse. The factors indicated the need to restructure the OUs to expedite the remediation process. The Navy and the regulatory agencies used two approaches: (1) the division of the site into geographic parcels, and (2) the review of the previously designated OUs for possible interim actions through alternative selection reports (ASR). The process of redefining the sites began in January 1992, and the designation of five parcels (A through E) was formally submitted in April 1992. HPS was divided into five contiguous units in 1992, Parcels A through E. In 1995, Parcel F, the offshore component of HPS, was designated as a distinct and separate parcel.

Parcels A through F contain 76 sites, including 68 IR and five SI parcel-specific sites and three parcel-wide sites under the Navy's IRP. Parcel F is designated IR-78 (see Table 5-7). IR sites IR-74, IR-75, and IR-76 are the FUDS. IRP sites include sites investigated because of chemical contamination and radiation concerns. In addition, the UST remediation has been folded into the IRP. With the exception of the railroad right-of-way (IR-52), all of the IRP sites are within the boundaries of HPS. Tables 5-1 and 5-7 list all the IRP sites. Appendix G of this report identifies the pertinent issues associated with each of these sites.

5.4.5.1 Parcel A IR Sites

Parcel A is the first parcel that will be transferred to the City of San Francisco. It consists of about 90 acres of the central area of HPS, including a western adjacent area that is connected by Crisp Avenue to the rest of the parcel. Parcel A is comprised of SI-19, SI-41, SI-43, SI-45, SI-50, IR-59JAI, and SI-77. The CERCLA ROD for Parcel A was signed on November 29, 1995. A Parcel A FOST is currently being prepared. Appendix G of this report identifies the pertinent issues and current status of each of the Parcel A sites.

5.4.5.2 Parcel B IR Sites

Parcel B consists of 63.5 acres of northeast shoreline and lowland coast. Thirteen IR sites are located at Parcel B: IR-06, IR-07, IR-10, IR-18, IR-20, IR-23, IR-24, IR-26, SI-31, IR-42, IR-60, IR-61, and IR-62. IR-46 is the Parcel B fuel lines and SI-45 is the Parcel B steam line system. Detailed information about these IR sites is presented in the final RI report for Parcel B, HPS (PRC 1996a). Due to recent changes to the boundaries for Parcels B and C, IR-25 was moved from Parcel B to Parcel C for remedial action. As a result, although information regarding IR-25 is contained in the Parcel B RI report, information about IR-25 is included in the discussion of Parcel C.

The Parcel B FS has been completed (PRC 1996d), and a ROD has been signed for Parcel B (TtEMI 1997a). After remediation, this parcel will support mixed use, including residential use. Appendix F of this report contains the enforceable schedules for the delivery of the IRP and decision documents. Appendix G of this report identifies the pertinent issues and current status of each of the Parcel B sites.

In mid-1998, the Navy agreed to an early transfer of IR-07, IR-18, IR-23, IR-60, IR-61, and IR-62 to the City of San Francisco. Parcel B was split into areas B-1 and B-2. The B-1 area contains the above listed

IR sites. The B-2 area contains all the other Parcel B IR sites. Parcel B has been put on an accelerated cleanup schedule. Soil removal in area B-1 began in July 1998. Area B-1 is scheduled to be transferred to the City of San Francisco in mid-1999. Area B-2 remediation is scheduled to begin in late-1998 with a transfer date in late-1999.

5.4.5.3 Parcel C IR Sites

Parcel C consists of approximately 72.6 acres of northeast shoreline and lowland coast. Nine IR sites are located entirely or partially at Parcel C: IR-25, IR-27, IR-28, IR-29, IR-30, IR-57, IR-58, IR-63, and IR-64. IR-49 is the Parcel C fuel lines. Detailed information about these IR sites is presented in the draft final Parcel C RI report (PRC 1997c). A draft FS for Parcel C has been reviewed by the regulatory agencies (PRC 1997a). Due to recent changes in the boundaries of Parcels B and C, information regarding IR-25 is contained in the final Parcel B RI report (PRC 1996a), although IR-25 is now part of Parcel C. Appendix F of this report contains the enforceable schedules for the delivery of the IRP and decision documents. Appendix G of this report identifies the pertinent issues and current status of each of the Parcel C sites.

5.4.5.4 Parcel D IR Sites

Parcel D consists of approximately 103.1 acres of southeast-central shoreline and lowland coast. Twenty-three IR sites are located entirely or partially at Parcel D: IR-08, IR-09, IR-16, IR-17, IR-22, IR-32, IR-33, IR-34, IR-35, IR-37, IR-38, IR-39, IR-44, IR-48, IR-53, IR-55, IR-65, IR-66, IR-67, IR-68, IR-69, IR-70, and IR-71. Detailed information about these IR sites is presented in the draft final Parcel D RI report (PRC 1996e). Due to recent changes in the boundaries of Parcels D and E, IR-36 was moved from Parcel D to Parcel E for remedial action. As a result, although information regarding IR-36 can be found in the Parcel D RI and FS reports, IR-36 is included in the discussion of Parcel E. The Parcel D FS report has been completed (PRC 1996g), and a draft ROD has been reviewed by the agencies. Appendix F of this report contains the enforceable schedules for the delivery of the IRP and decision documents. Appendix G of this report identifies the pertinent issues and current status of each of the Parcel D sites.

5.4.5.5 Parcel E IR Sites

Parcel E consists of approximately 168.3 acres of south shoreline and lowland coast. Twenty IR sites are located entirely or partially at Parcel E: IR-01/21, IR-02, IR-03, IR-04, IR-05, IR-11, IR-12, IR-13, IR-14, IR-15, IR-36, IR-38, IR-39, IR-40, IR-47, IR-52, IR-54, IR-56, IR-72, and IR-73. Detailed

information about these IR sites is presented in the draft final Parcel E RI report (TtEMI 1997b). Due to recent changes in the parcel boundaries, information regarding IR-36 is contained in the draft final Parcel D RI report (PRC 1996e), but is included under Parcel E in this report. The draft Parcel E FS report was submitted to the regulatory agencies for review in January 1998 (TtEMI 1998b). Appendix F of this report contains the enforceable schedules for the delivery of the IRP and decision documents. Appendix G of this report identifies the pertinent issues and current status of each of the Parcel E sites.

5.4.5.6 Parcel F

Parcel F consists of approximately 443 acres of submerged lands under San Francisco Bay. The parcel is bounded by Parcels B, C, D, and E, and the property boundary in San Francisco Bay. The entire parcel is considered IR-78. The draft Parcel F FS report was submitted April 3, 1998 (TtEMI/Levine-Fricke-Recon 1998). Appendix F of this report contains the enforceable schedules for the delivery of the IRP and decision documents. Appendix G of this report identifies the pertinent issues and current status of the Parcel F site.

5.4.5.7 Focused Investigations

This section summarizes the focused investigations that have been performed at HPS to address specific issues arising from the facility-wide investigations. The focused investigations vary in duration and scope and include the evaluation of ambient soil conditions, hydrogeologic characterization, quarterly groundwater monitoring, tidal influence monitoring, and an ERA.

Evaluation of Ambient Soil Conditions

As part of the RI/FS, ambient (or "background") levels of metals in soils needed to be assessed. Ambient levels are defined as concentrations of metals that occur naturally in the environment. These ambient levels are used to evaluate if site soil has been impacted by industrial activities by comparing detected metals concentrations to ambient levels. Soil containing metals concentrations that exceed the ambient levels are considered potentially affected by site activities and may need further investigation.

Ambient soil and groundwater levels were first developed at HPS in 1992 (HLA 1992a). The first technical memorandum presenting the results of the ambient levels is dated March 19, 1992. On January 17, 1995, the Navy and its contractors, DTSC, EPA, and RWQCB, met to confirm the evaluation and use of the interim ambient levels (IAL) and to discuss technical differences of opinion. At this meeting, the

Navy, EPA, and RWQCB agreed to a revised technical approach for assessing IALs for HPS. The recalculated ambient levels using the new technical approach are referred to as HPALs, which replaces the term "IAL" because HPALs are expected to represent final ambient level values agreed upon by all the signatories to the FFA (PRC 1995d). DTSC concurred with the recalculated HPALs in a letter dated February 27, 1995.

Hydrogeologic Characterization

In 1994, a technical memorandum was prepared to integrate available pertinent hydrogeologic data for HPS. No physical investigation was conducted; rather, the technical memorandum integrated and evaluated data from tidal influence monitoring, aquifer tests, UST removals, SIs, and RIs. These data were analyzed to create a facility-wide, conceptual hydrogeologic model and to identify hydrogeologic data gaps. Facility- and parcel-wide geologic cross-sections were constructed to show the thickness and vertical relationship of HPS geologic units and the depths to groundwater at HPS. Tables were also compiled to summarize seasonal groundwater level fluctuations, tidal influence monitoring results, aquifer testing results, and TDS and salinity data. The compiled data were then reviewed and evaluated to provide a simplified conceptual model of aquifer relationships and groundwater flow patterns.

The technical quality and representativeness of pertinent and available data were also reviewed, including information on known contaminants and HPS geology and hydrogeology. Risk assessment, risk management, and site remediation technologies likely to be used to remediate soil and groundwater and their technical requirements were then identified. Finally, data gaps related to the characterization, risk assessment, risk management, and cleanup of all HPS sites were identified (PRC 1994e).

Quarterly Groundwater Monitoring

Quarterly and annual groundwater monitoring were conducted at IR-06, IR-08, IR-09, and IR-10. IR-06 and IR-10 are located in Parcel B, and IR-08 and IR-09 are located in Parcel D. Groundwater monitoring at these four IR sites was conducted in November 1993 (Quarter 1), February 1994 (Quarter 2), May 1994 (Quarter 3), and August and September 1994 (Quarter 4) in accordance with the monitoring program described in the groundwater monitoring plan (HLA 1992c).

In addition to quarterly groundwater sampling, groundwater levels at all existing HPS monitoring wells were measured twice during the monitoring program. Water level monitoring for the wet season was conducted on February 18, 1994, and for the dry season was conducted on November 2, 1995

(HLA 1995a). In addition to these groundwater measurement events, facility-wide groundwater levels were also measured on May 22, 1995, and April 11, 1996. According to these monitoring results, the groundwater recharge is limited during the summer months. Water level differences along the shoreline are less pronounced and appear to be less influenced by seasonal changes (HLA 1995a).

Tidal Influence Monitoring

To characterize the extent of tidal influence on groundwater levels at HPS, three rounds of quarterly facility-wide tidal influence monitoring were conducted. The first round of quarterly monitoring was conducted in October and November 1991; the second round was conducted from January to March 1992; and the third round was conducted in February and March 1993. For the first and second rounds of monitoring, two tidal monitoring stations (located at Parcels B and E) were constructed to measure water levels in the San Francisco Bay. Forty-one existing groundwater monitoring wells were also selected for use in facility-wide tidal influence monitoring activities. Water levels in the 41 selected monitoring wells and at the tidal monitoring stations were monitored continuously for 72 hours. Water samples were collected from the monitoring wells and tidal monitoring stations and analyzed for TDS and salinity. Thirty-nine groundwater monitoring wells in Parcel E were monitored for groundwater level fluctuations, TDS, and salinity. In addition to the facility-wide tidal influence study, tidal influence monitoring was conducted in the selected monitoring wells and tidal monitoring stations in Parcels D and E during February and March 1996.

In March 1997, a technical memorandum was published presenting the rationale, technical approach, and data used to estimate current annual groundwater flow rates and mass loading rates of metals from the A-aquifer groundwater at Parcel C. The Parcel C annual groundwater flow rates and mass loadings of metals were estimated from two groundwater pathways in the A-aquifer: (1) indirect groundwater discharge from inland groundwater to leaky storm drains located "below" the water table (because storm drains discharge directly to the Bay), and (2) direct groundwater discharge from near shore groundwater to the shoreline of the Bay. The estimated loads were compared to other Bay area discharge sources, to background or ambient Hunters Point groundwater ambient level loads in groundwater, and to National Ambient Water Quality Criteria (NAWQC) for saltwater aquatic life protection as provided by RWQCB (1995). The purpose of the memorandum was to provide decision-makers with information to aid in prioritizing CERCLA remedial action activities.

Ecological Risk Assessment

The HPS aquatic ERA is a basewide assessment conducted in accordance with the phased approach advocated by the Navy and EPA (EPA 1989, 1992; Cal/EPA 1996). The aquatic ERA consists of two phases: Phase 1A, a screening-level analysis and Phase 1B, a quantitative analysis. The Navy completed the Phase 1A ERA for HPS in July 1994 and the draft Phase 1B ERA was submitted to the regulatory agencies on November 15, 1996.

The objective of Phase 1A ERA was to qualitatively evaluate the potential for risk to ecological receptors from exposure to contaminants at HPS. Phase 1A consisted of the following five technical tasks: (1) compile information on and evaluate HPS characteristics; (2) compile existing environmental data and identify chemicals of potential concern (COPC); (3) characterize habitats and biota at HPS; (4) compile information on and evaluate toxicological and ecological efforts for COPCs; and (5) identify contaminant migration pathways and exposure routes.

The objective of the Phase 1B ERA was to describe the nature and extent of contamination in offshore sediments from HPS sources, estimate and characterize risk, and provide an interpretation of the risk and how it affects the transfer of Parcel F (PRC 1996f).

5.4.5.8 Removal Actions

This section discussed completed and proposed removal actions at HPS. Removal actions involve sandblast waste fixation, the IR-06 tank farm facility, facility-wide USTs, exploratory excavations, the storm drain system, and facility-wide groundwater. As a result of a site evaluation of HPS to determine acceleration opportunities for the HPS BCP in 1993, 11 potential removal actions were identified. Of these 11, four removals were designated by the Navy and regulatory agencies as high priority activities: exploratory excavations, storm drain repair and sediment removal action, groundwater removal actions in Parcels B, C, and E (currently, only the Parcel E groundwater removal documentation is being prepared), and the removal of floating product at IR-03 in Parcel E. The removal actions are discussed in the following paragraphs.

Sandblast Waste Fixation

Sandblast operations that generated paint chips, heavy metals, and oil were conducted at numerous locations at HPS, including Parcel B. Between 1991 and 1995, approximately 5,000 tons of sandblast

waste was collected by the PWC or Navy subcontractors for EFA West, consolidated in Parcel E, and sent to the Battelle Laboratories recycling facility for treatment by fixation. The sandblast waste was then used in the manufacturing of asphalt for roads. This phase of the removal action was completed in 1995. Also see Section 5.3.12.2 for information on the Phase III air sampling performed in relation to a sandblast waste pile that was sorted and removed from Parcel E.

IR-06 Tank Farm at Parcel B

The IR-06 Tank Farm was constructed in 1942 as a diesel fuel and lubrication oil storage facility and consisted of 10 aboveground fuel and lubrication oil tanks, piping, two pumphouses, and associated equipment. The storage tanks were located in four separate bermed areas: Area 1 contained concrete support racks for eight previously removed horizontal lubrication oil tanks; Area 2 contained a 12,000-gallon vertical tank located directly on the ground surface; Area 3 contained eight vertical 12,000-gallon tanks, each supported by four concrete tank support piers; and Area 4 contained one 210,000-gallon, flat-bottomed tank also located directly on the ground surface. One of the pumphouses was located between Areas 1 and 2, and the second pumphouse was located between Areas 3 and 4 (HLA 1992b).

The purpose of the removal action at IR-06 was to remove leaking ASTs and associated piping. All tanks, piping, and steel at the tank farm were decontaminated and salvaged. Tank and pipe contents and rinsate water were recycled or treated. Approximately 7 yd^3 of friable asbestos and 10 yd^3 of nonfriable asbestos were generated and landfilled during the removal action. Approximately 140 yd^3 of soil was excavated to remove underground piping. This soil contained metals at concentrations above the TTLC and was disposed of as hazardous waste in a Class I landfill. Approximately 140 yd^3 of vegetation, concrete, and building debris was also disposed of at a Class III landfill. All storm drain lines and other underground piping outside the berms remain in place. Sumps were cleaned and backfilled with soil.

Floating petroleum product was detected on the groundwater during the installation of a new catch basin in Area 3. Visible petroleum staining was observed in the catch basin and pipe removal excavations. In Areas 1, 2, and 4, the visible staining extended to a depth of approximately 3 to 4 feet bgs; in Area 3, the visible staining extended to a depth of approximately 8 feet bgs.

After removal of the tanks and piping and installation of the new catch basin in 1993, the site was graded, the berms were re-established, and a high-density polypropylene (HDPP) liner was placed over the

bermed areas to prevent surface water infiltration. An HDPP liner was installed instead of the clay cap specified in the removal plans because remediation of the soil at the tank farm was expected to occur within the next few years.

The Navy's contractor IT began soil removal actions in April 1997. Eighteen excavation areas were identified at IR-06 and soil was removed at 17 of the 18 excavation areas. Soil was transported by truck to a temporary on-site area at HPS to be sampled for waste characterization purposes. Confirmation sampling was performed at the excavation areas and the areas were backfilled with clean soil. The removal actions were completed in October 1997. The total volume of soil removed from IR-06 was approximately 4,222 yd^3. The soil was disposed of off site (IT 1998a).

Storm Drain System

Sediments from the Parcel A storm drain system were removed in 1994 and 1995 by PWC. Approximately 32.2 yd^3 of sediment was removed from the Parcel A storm drain system. The sediment was disposed of off site (HLA 1996a). SI results indicate that (1) storm drain sediments in Parcels B, C, D, and E are contaminated with organic and inorganic compounds; (2) storm drain integrity is poor in several locations, potentially allowing storm water to migrate to the groundwater; and (3) tidal flap gates are inoperable, potentially allowing sediments to migrate from the storm drain system to the Bay during tidal changes. The Navy conducted a nontime-critical removal action in 1997 that involved removing sediment from the storm drain systems at Parcels B, C, D, and E. Approximately 1,837 yards of contaminated sediment was removed from 64,909 linear feet of storm drain lines. The contaminated sediment was disposed of off site (IT 1997d).

Groundwater Removal Action

Three water-bearing units, the A-aquifer, B-aquifer, and bedrock water-bearing zone, have been identified below HPS. The A-aquifer generally consists of saturated Artificial Fill and, to a lesser extent, Undifferentiated Upper Sand Deposits. The water table in the A-aquifer is generally located at 4 to 17 feet bgs. The B-aquifer consists of saturated Undifferentiated Sedimentary Deposits. The bedrock water-bearing zone consists of saturated weathered zones and fractures within the bedrock.

Groundwater in the aquifers generally flows toward San Francisco Bay except in Parcel D, where groundwater flows inland from the Bay and the vertical gradient between the aquifers is generally upward. Contaminated groundwater has been identified and delineated in Parcels B, C, and E. Detected

contaminants include TPH, solvents, and metals. Contaminants are generally limited to the Artificial Fill but have been detected in the Undifferentiated Upper Sand Deposits and top several feet of Bay Mud in limited areas. The removal action for this project will involve source control and groundwater remediation or isolation of each affected groundwater area.

The removal action to contain contaminated groundwater at IR-01/21 with a sheetpile wall approximately 600 feet long was initiated in mid-1997. The removal action consisted of groundwater containment, extraction, and discharge to the SWPCP. The sheetpile wall has been installed; however, technical difficulties are currently delaying the installation of the extraction system. This removal action is expected to be completed in 1998. The removal action to contain contaminated groundwater and floating product with a sheetpile wall approximately 800 feet long along the shoreline at IR-03 was begun in January 1997 and completed in spring 1998.

Groundwater is contaminated at IR-10, IR-24, IR-26, and IR-46, but based on dilution and attenuation modeling, contaminants in groundwater will drop below NAWQCs at the tidally influenced zone. Groundwater contamination at IR-25 and IR-28 in Parcel B and IR-28 in Parcel C will be addressed later in the FS.

5.5 INTERVIEWS

Interviews were part of the 1995 VSI and 1997 tenant survey process. Interviews were held daily with base security department personnel and environmental personnel regarding the areas to be inspected that day during the 1995 VSI. Since most areas were unoccupied, interviews with specific building or site personnel frequently were impossible. Tenants or Navy representatives were interviewed for occupied locations when available.

For the 1997 tenant survey, personnel familiar with the tenant's current operating procedures were interviewed at each building. If a building was recently vacated, Mr. Don Brown of the Caretaker Site Office was questioned about the former tenants and their activities at the buildings.

The interviews provided additional information regarding the past and current operations at HPS. Appendix B of this report contains a summary of the interviews conducted during the 1995 VSI and 1997 tenant survey.

5.6 AERIAL PHOTOGRAPH ANALYSIS

The objectives of the aerial photograph analysis were to document geomorphic and land-use changes at HPS over time and to identify AOCs that might indicate prior releases of chemicals to the environment. Five aerial photographs were selected for review to cover several periods of development at HPS: pre-Navy (1935), World War II (1946), post-war (1969), Triple A's tenancy (1985), and present-day activities (1994). Many of the AOCs identified during the aerial photograph analysis were located within IRP sites currently being investigated or were outside the HPS boundaries. Further study would be required to evaluate whether any of the AOCs should be investigated as previously unidentified sources of contamination. The specific AOCs are discussed in the aerial photograph review report in Appendix C.

The aerial photograph from the pre-Navy period (1935) showed very limited development in the HPS area. The primary land use at the time was agricultural, with a small amount of apparent industrial activity in the area of Dry Docks 2 and 3. Numerous piers extending into the Bay along the north shore of the peninsula and one southwest of the dry docks indicated ongoing maritime activities. Some apparent residences were scattered across the adjacent uplands areas. A low-lying area to the southwest, adjacent to what is now HPS, was a mixture of open agricultural land and developed residential and industrial blocks.

By 1946, only the immediate vicinity of the original dry docks remained substantially unchanged from their appearance in 1935. Housing units had been established on the highlands of HPS (Parcel A), while portions of the ridge had been leveled to fill in the Bay in Parcels B through E. The low-lying areas were dedicated to industrial activities except for part of the southern shoreline of Parcel E, where temporary Quonset hut housing had been built. The land area of HPS had increased only slightly by 1969, with the placement of a large amount of new fill in the landfill area of Parcel E and in the northwest corner of Parcel B (IR-07). The only significant land change from 1969 to the present was the filling of a slough in the landfill area of Parcel E.

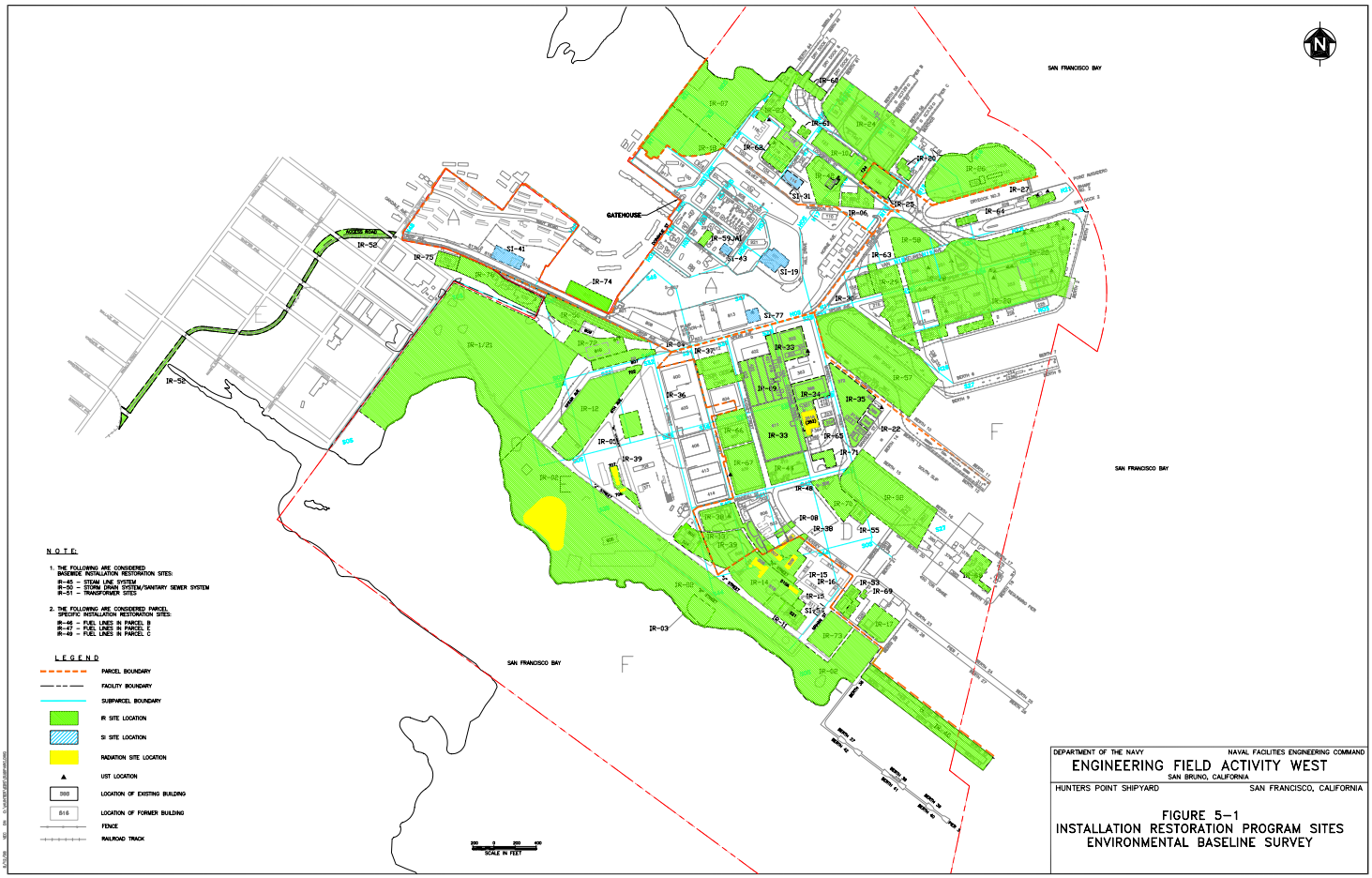
5.7 TITLE DOCUMENT REVIEW

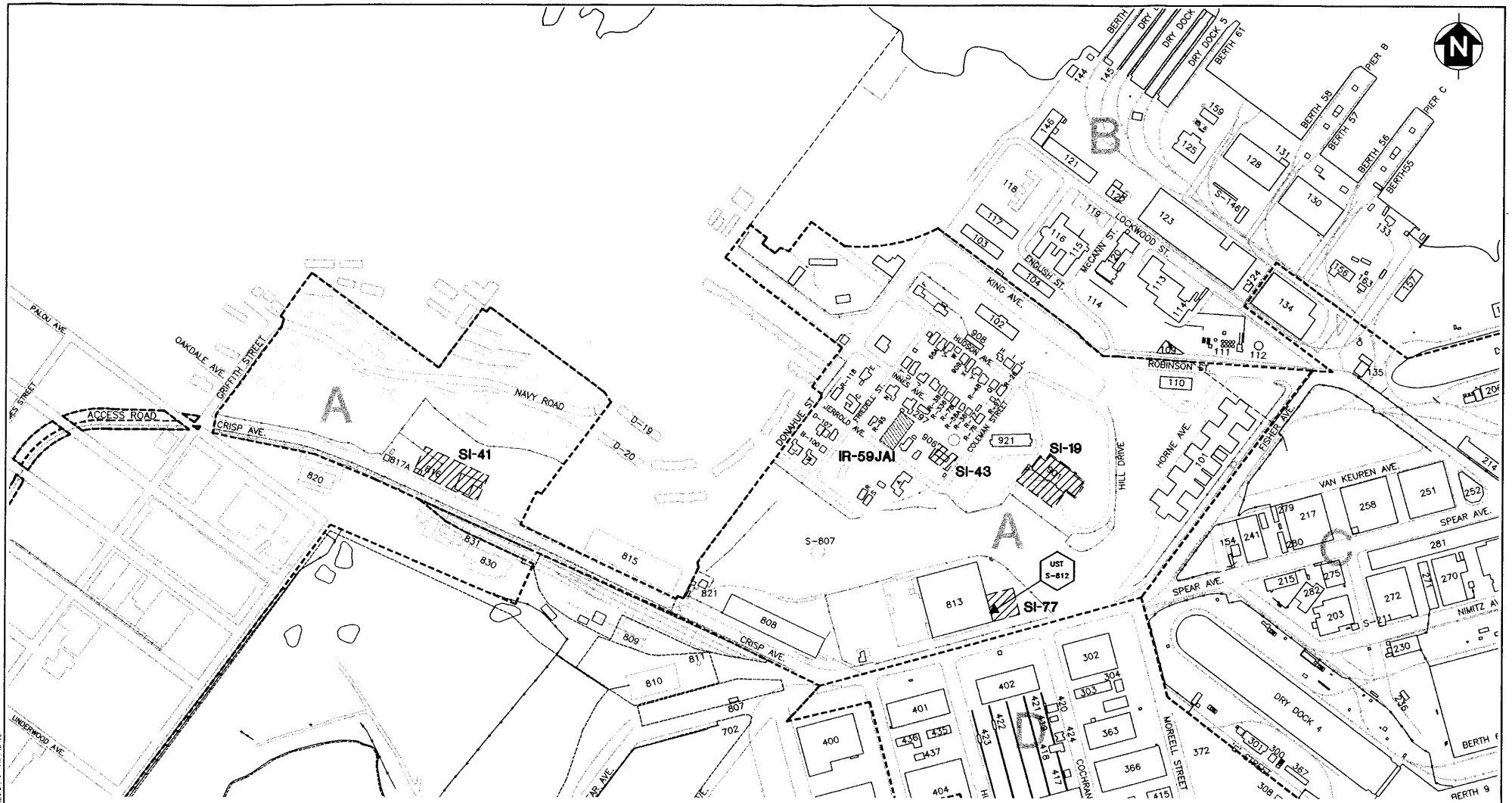
The title document review uncovered a very limited amount of information about businesses in the HPS vicinity prior to the Navy purchase of the property. Despite the availability of court records that listed the recorded property owners at the time of the sales, no specific information could be found that detailed the improvements to and use of the land along the Hunters Point peninsula. Most of the land was

undeveloped or underwater, and the property owners were mostly individuals with no obvious connection to any industrial activity. Aside from the land around Dry Docks 2 and 3, which was owned by the Bethlehem Steel Corporation, several blocks were owned by the South San Francisco Dock Company (see Figure 5-8). The company probably maintained one or more piers in the area, but no Hunters Point address for the company was found in the title documents reviewed. The Houghton Company also owned property in the vicinity, but the nature of the company's business could not be determined.

Most of the detailed information that was available applied to businesses adjacent to HPS to the north and southwest. Table 5-8 lists the businesses of the pre-Navy period that could be identified at HPS and in the immediate area. The table also includes the San Francisco Assessor's block number, the business address (at the time), and any additional relevant information obtained. Several of these businesses may have used chemicals which, if disposed of improperly, could have contributed to environmental contamination. An old fire insurance (Sanborn) map showed the location of a 100-barrel underground fuel oil tank that may not have ever been removed. The tank appeared to be associated with a business called the Imperial Glue Company at 900 Palou Avenue and would have been located on Fitch Avenue between Palou and Oakdale. The property was owned by Legallet Wool Company, and is now one of the FUDS sites (IR-75), east of what was Building 820.

In addition to the fuel oil tank, several ASTs were located at an oil reclaiming facility at 1096 Quesada Avenue. No records were found containing information about any spills or leaks of chemicals during this period. Several water wells were located within this area adjacent to HPS, including a water bottling company at 930 Oakdale Avenue.


SAN FRANCISCO BAY
GATEHOUSE
ACCESS ROAD
SAN FRANCISCO BAY
SAN FRANCISCO BAY
NOTE:
1. THE FOLLOWING ARE CONSIDERED BASEWIDE INSTALLATION RESTORATION SITES:
IR-45 – STEAM LINE SYSTEM
IR-50 – STORM DRAIN SYSTEM/SANITARY SEWER SYSTEM
IR-51 – TRANSFORMER SITES
2. THE FOLLOWING ARE CONSIDERED PARCEL SPECIFIC INSTALLATION RESTORATION SITES:
IR-46 – FUEL LINES IN PARCEL B
IR-47 – FUEL LINES IN PARCEL E
IR-49 – FUEL LINES IN PARCEL C
LEGEND
PARCEL BOUNDARY
FACILITY BOUNDARY
SUBPARCEL BOUNDARY
IR SITE LOCATION
SI SITE LOCATION
RADIATION SITE LOCATION
UST LOCATION
LOCATION OF EXISTING BUILDING
LOCATION OF FORMER BUILDING
FENCE
RAILROAD TRACK
SCALE IN FEET
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY WEST
SAN BRUNO, CALIFORNIA
HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
FIGURE 5–1
INSTALLATION RESTORATION PROGRAM SITES
ENVIRONMENTAL BASELINE SURVEY



LEGEND

	IR SITES		UST SITE	324	EXISTING BUILDINGS
	SITE ASSESSMENT		PARCEL BOUNDARY	812	FORMER BUILDINGS

200' 0 200' 400'
SCALE: 1"=400'

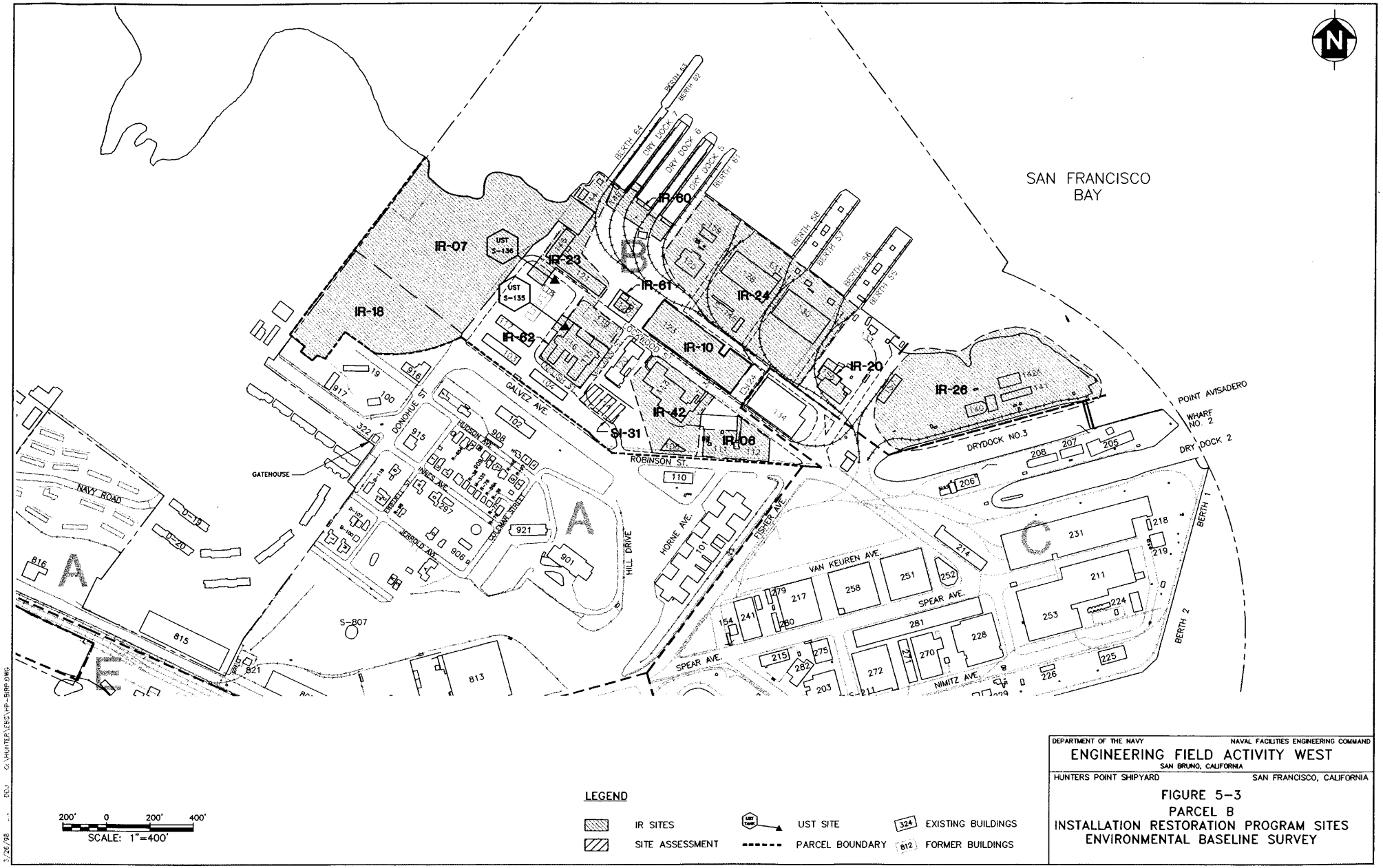
DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST
SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 5-2
PARCEL A
INSTALLATION RESTORATION PROGRAM SITES
ENVIRONMENTAL BASELINE SURVEY

3/27/98 DDJ O:\HUNTER\EBS\HP-AIRP.DWG



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

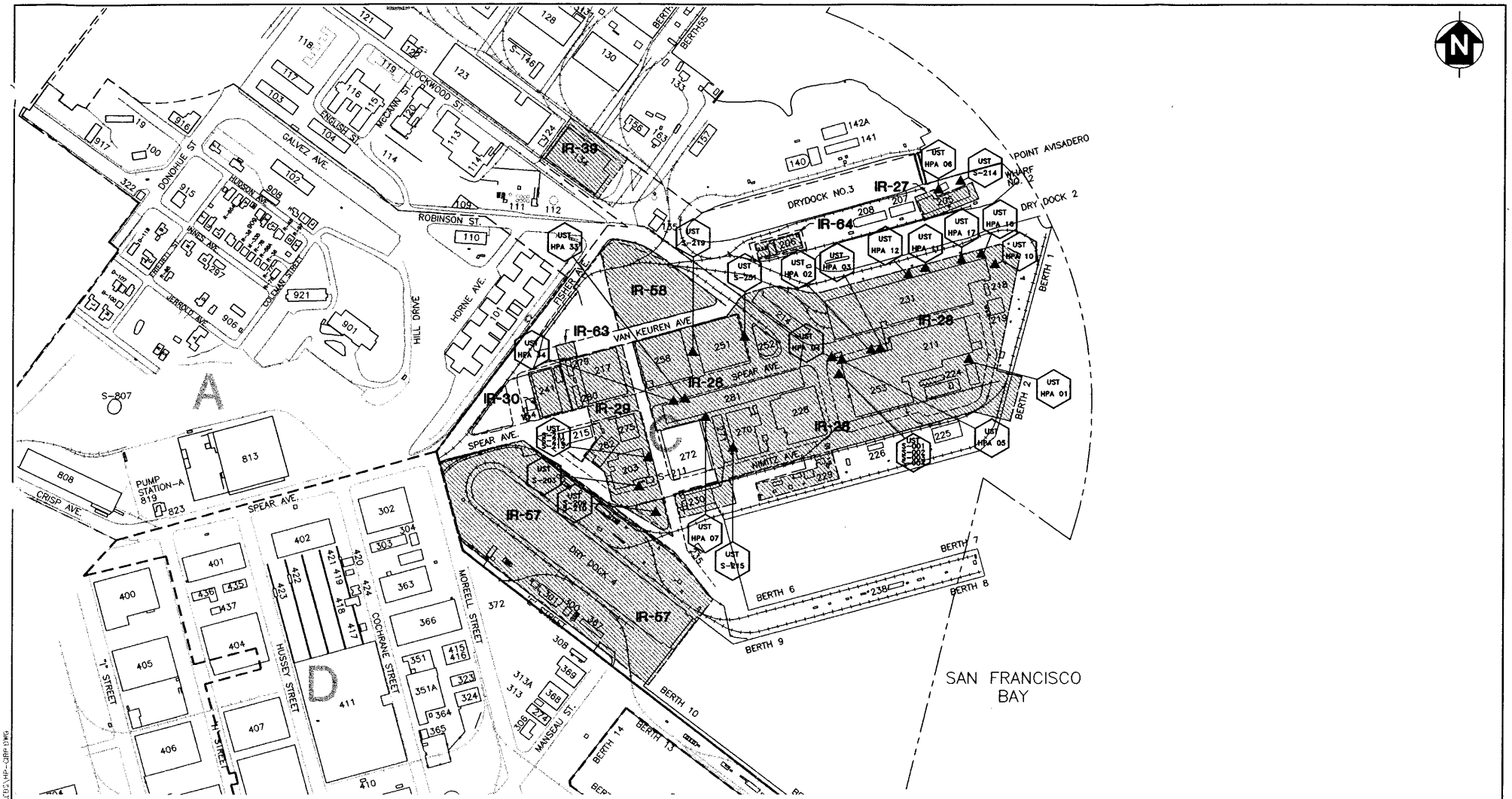
FIGURE 5-3

PARCEL B

INSTALLATION RESTORATION PROGRAM SITES

ENVIRONMENTAL BASELINE SURVEY

3/26/98 DDJ G:\HUNTER\EBS\HP-BIRP.DWG



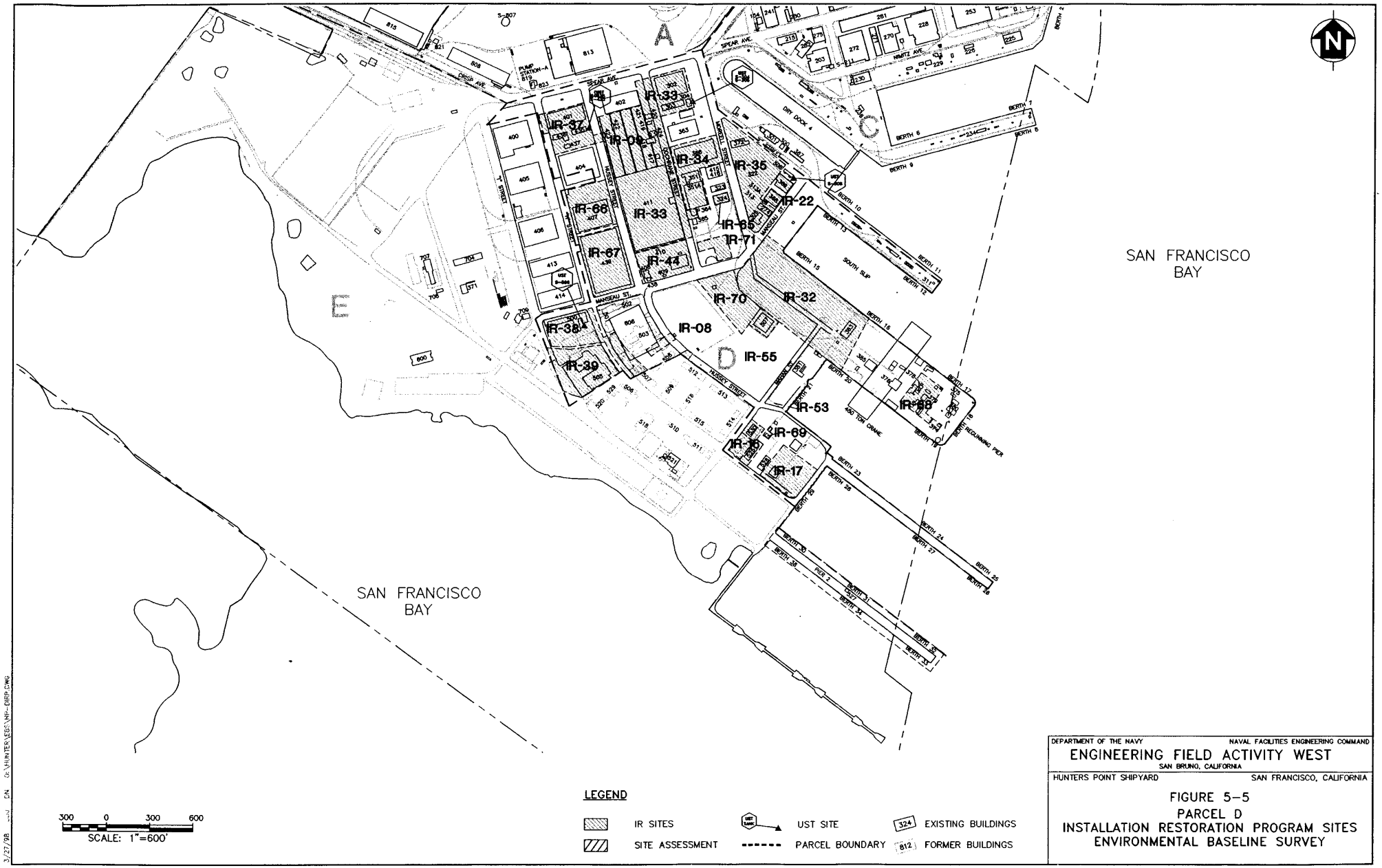
LEGEND

IR SITES
SITE ASSESSMENT
UST SITE
PARCEL BOUNDARY
324 EXISTING BUILDINGS
812 FORMER BUILDINGS

200' 0 200' 400'
SCALE: 1"=400'

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY WEST
SAN BRUNO, CALIFORNIA
HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 5-4
PARCEL C
INSTALLATION RESTORATION PROGRAM SITES
ENVIRONMENTAL BASELINE SURVEY



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

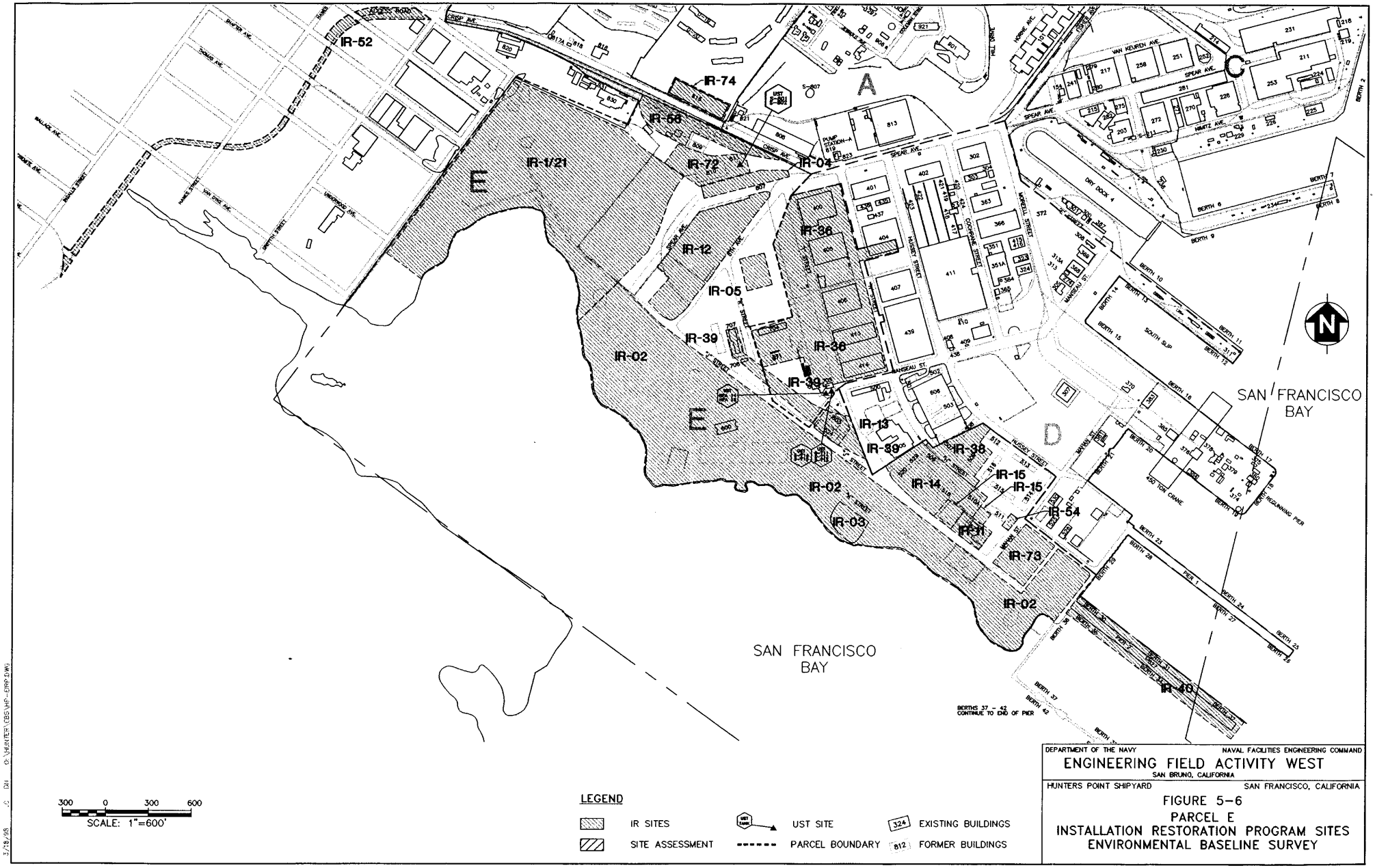
FIGURE 5-5

PARCEL D

INSTALLATION RESTORATION PROGRAM SITES

ENVIRONMENTAL BASELINE SURVEY

3/27/98 DN O:\HUNTER\EBS\HP-DIRP.DWG



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

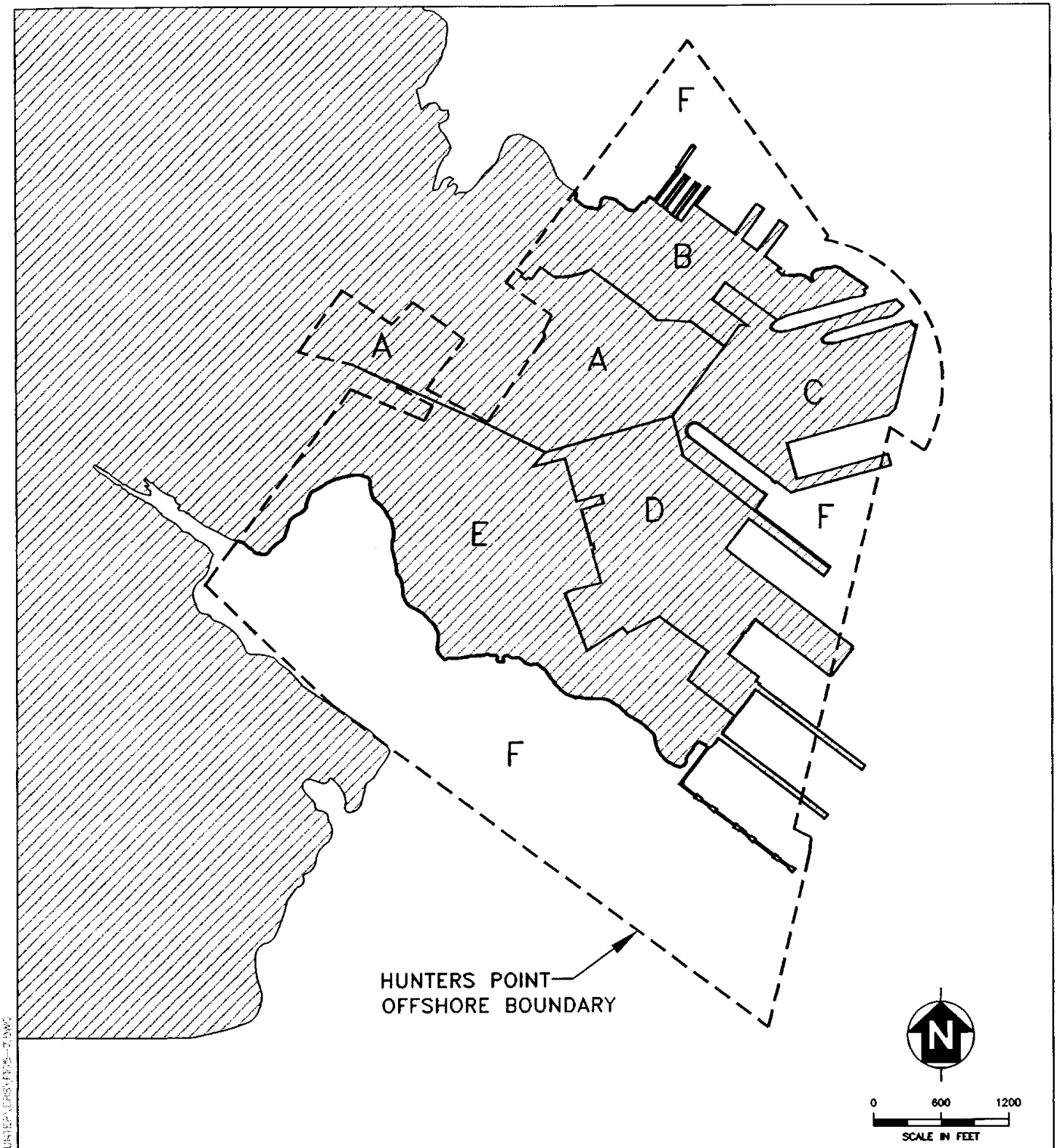
HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 5-6

PARCEL E

INSTALLATION RESTORATION PROGRAM SITES

ENVIRONMENTAL BASELINE SURVEY



DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

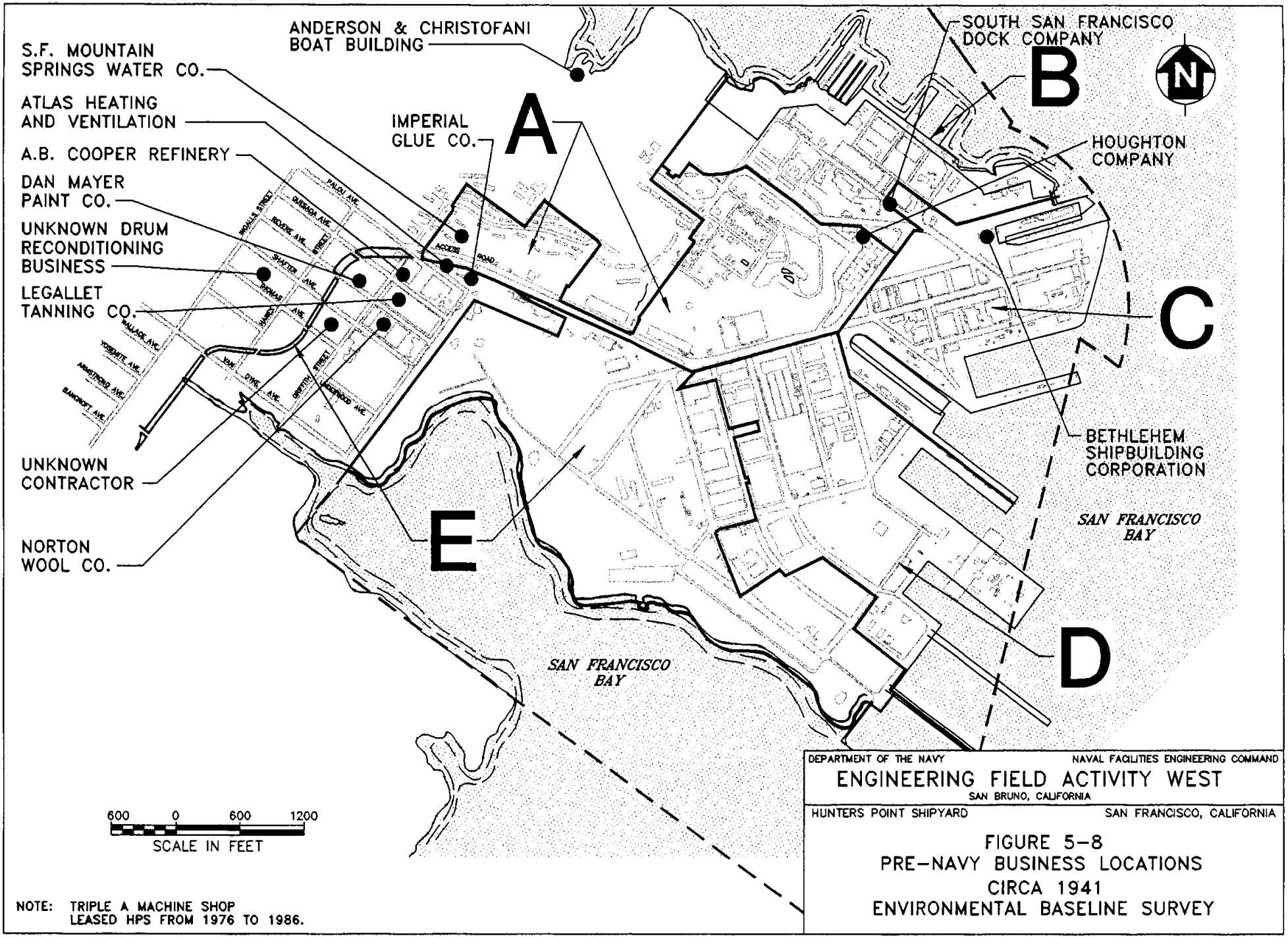
ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 5-7
PARCEL F
ENVIRONMENTAL BASELINE SURVEY

3/16/98 VEC DN O:\HUNTER\EBS\OLAY8X11.DWG



NOTE: TRIPLE A MACHINE SHOP LEASED HPS FROM 1976 TO 1986.

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 5-8
PRE-NAVY BUSINESS LOCATIONS
CIRCA 1941
ENVIRONMENTAL BASELINE SURVEY

TABLE 5-1

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
A	H-OS	SI-19[b]	Building 901 (Officers Club)	Sandblast waste and oily material	No significant findings	No further action; to be released to City
A	H-48	SI-41[b]	Buildings 816, 817, 817A, and 818	Chlorine and radioactive material	No significant findings	No further action; to be released to City
A	H-53	SI-43[b]	Building 906 (Gardening Tool House)	Pesticides and fertilizer	Pesticides in soil; soil removed	No further action; to be released to City
A	H-53	IR-59 JAI	Former residential lot	Sandblast waste and pesticides	Soil removed	No further action; to be released to City
A	H-49 to H-57	IR-59	Parcel A groundwater investigation	Motor oil	No significant findings	No further action; to be released to City
A	S-47	SI-77[b]	UST S-812 at Building 813	Fuels	No significant findings	No further action; to be released to City
B	N-7	SI-31	Building 114[d]	Sandblast waste and radioactive material	No significant findings	No further action; to be released to City
B	N-10	IR-06	Building 111[d] and 112[d] and Tank Farm with ASTs	Diesel fuel, lubricating oil, and stoddard solvent	Metals, VOCs, PAHs, PCBs, TPH-d, and TOG detected in soil and groundwater	Soil remediation by excavation
B	N-2, N-3, N-6, and N-OS	IR-07	Sub-base Area and Radiation Site	Diesel fuel, paint, solvents, sandblast waste, waste oil, and radioactive fill material	Potential radiation issue; PAHs, TPH-d, and TOG detected in soil; and TPH in groundwater	Soil remediation by excavation
B	N-8 and N-11	IR-10	Building 123 (Battery and Electroplating Shop)	Waste acids (with metals)	Waste acids in storm drains; cyanide in landfills; heavy metals in floor drains; and VOCs detected in soil and groundwater	Soil remediation by excavation

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
B	N-1, N-2, and N-3	IR-18	Waste Oil Disposal Site (Dago Mary's) and Triple A Sites	Waste oil and radioactive fill material	Potential radiation issue; waste oil contamination and metals and TOG in soil and groundwater	Soil remediation by excavation
B	N-12 and N-15	IR-20	Building 156	Unknown chemicals and reclaimed oil	Cracked and stained asphalt, fluid and sludge in sump, unidentified pond-like feature, PCBs and TPH-g in soil, and metals and TOG in groundwater	Soil remediation by excavation
B	N-5, N-6, and N-OS	IR-23	Buildings 144, 146, 161, and 162; Radiation Site (Building 146); UST S-136 at Building 118; and SA-77 (Building 145)	Fuels, oils, paint resins, other unknown chemicals, and radioactive material	Spillage of oil and diesel in storm drains and metals, PAHs, pesticides and PCBs, and TOG in shallow soil	Soil remediation by excavation
B	N-9, N-11, N-12, N-16, and N-OS	IR-24	Buildings 124(d), 125, 128, 130, 131, and 159	Acids, various chemicals, solvents, PCBs, and paint	Various chemicals including VOCs, methyl ethyl ketone, and hydrocarbons stored on a portion of the site; poor housekeeping identified; low levels of VOCs, PAHs, PCBs, and TOG detected in soil; and TPH-d detected in groundwater	Soil remediation by excavation
B	N-14, N-15, and N-16	IR-26	Building 157 and Area XIV (area north of Dry Dock 3)	Oils, paint, sandblast waste, PCBs, and asbestos	Oily sludge and staining, a transformer, and storm drain sediments identified; sandblast material and asbestos suspected; and metals, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil	One small area of soil remediation requiring excavation present

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
B	N-7 and N-10	IR-42	Buildings 109, 113, and 113A and Radiation Site (Buildings 113 and 113A)	Oil and grease	Oil and grease, pitted floor stains, and possible buried tank identified	Soil remediation by excavation
B	Parcel-Wide	IR-46	Fuel Distribution Lines/Tank Farm (utility investigation)	Diesel fuel and lubricating oil	Metals, VOCs, PAHs, PCBs, and TPH detected in soil beneath the fuel lines	Removal of fluids from lines and removal of lines
B	N-OS	IR-60	SA-76 (Dry Docks 5, 6, and 7)	Sandblast waste, paint, and fuel	Degraded asphalt and concrete observed at the site	Clean utility and operating vault and soil remediation by excavation
B	N-6	IR-61	SA-79 (Building 122)	Lubricating oil, transformer oil, and battery acids	Potential oil and grease, PCBs, and acid contamination	Soil remediation by excavation
B	N-4 and N-5	IR-62	SA-82 (Buildings 115 and 116) and UST S-135 at Building 116	Hydraulic fluid, oils, glues, and stains	Machine shop, transformer substation, blower apparatus, and an UST at the site	No further action
C	N-11	IR-25	Building 134	Sludge, oil, and solvents	Oil and corrosive materials identified on floor and under machines; sumps, drums, dip tanks, and machines are of concern; VOCs, PAHs, pesticides, TOG, TPH-d, and motor oil detected in soil	Soil remediation by excavation and groundwater remediation
C	N-21	IR-27	Building 205 and USTs S-214 and HPA-06 at Building 205	Lubricating oil, dielectric fluid, and asbestos	Asbestos, petrochemicals, lead oil and dielectric fluids identified and TOG detected in the pump chamber water sample	Removal and disposal of pump chamber water to POTW; no further action

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
C	N-19, N-20, N-22, N-24, N-25, N-26, and N-03	IR-28	Buildings 211/253, 214, 218, 219, 224, 228, 229, 230, 231, 251, 252, 258, 270, 271, and 281; UST HPA-01 (Building 211); USTs HPA-02, HPA-03, HPA-04, HPA-05, S-001, S-002, S-003, and S-004 (Building 253); UST HPA-07 (Building 272); USTs HPA-10, HPA-11, HPA-12, HPA-16, HPA-17 (Building 231), HPA-33 (Building 281), and HPA-34 (Building 281); UST S-215 (Building 271); USTs S-219 and S-251 (Building 251); and SA-94 (Building 251), SA-99 (Building 230), SA-100 (Building 281), SA-101 (Building 273), SA-102 (Building 270), SA-103 (Building 271), and SA-111 (Building 229)	Fuels, oil, paint, solvents, PCBs, sandblast waste, other unknown chemicals, and radioactive material	Potential radiation issue; staining, oil releases; metals, VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil; and metals, VOCs, and PAHs detected in groundwater	Soil remediation by excavation and groundwater remediation
C	N-18, N-23, and N-26	IR-29	Buildings 203, 217, 275, 279(d), 280, and 282	Fuel, oil, acid, paint, unknown chemicals, aluminum oxide, and sandblast waste	VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil and storm drain sediments; UST sites; soil discoloration; photo and paint residues; possible leakage to storm drains of metals, particulates, and sandblast materials; and VOCs identified in groundwater	Soil remediation by excavation
C	N-18	IR-30	Building 241	Oil and asbestos	Stained and discolored soil, oozing oil and asbestos, potentially contaminated unlined utility trench, and metals and VOCs in soil	There are no planned removal actions

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
C	S-27	IR-57	Dry Dock 4 Area	Oil, PCBs, and sandblast waste	Sandblast materials, oil staining from transformers, and metals, PAHs, PCBs, and TOG detected in storm drain sediments	Soil remediation by excavation
C	N-13 and N-14	IR-58	Scrap Yard (north of Building 258)	Oil and miscellaneous debris	Oil stains on soil; miscellaneous debris may contain oil, leaking lead acid batteries, and other leaking materials; metals, VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil; and VOCs and pesticides detected in storm drain sediments	Soil remediation by excavation and groundwater remediation
C	N-18	IR-63	SA-89 (Building 278[d])	Unknown	The former building may have been a possible paint storage location	There are no remedial actions planned
C	N-14 and N-21	IR-64	SA-90 (Building 206)	Transformer oil and batteries	Building is clean except for debris around outside; big oily area or stained area not observed	Soil remediation by excavation
D	S-OS	IR-16	Container Storage Area	PCBs and unknown chemicals	Low levels of metals and hydrocarbons identified and miscellaneous chemicals identified	RI activities to verify sample quality
D	S-41	IR-48[b]	Suspected Steam Lines at former Building 503	Waste oil and PCBs	The suspected steam lines did not exist according to SI field investigation	No further action
D	S-41 and S-42	IR-08	Former Building 503 (now Building 606) PCB Spill Area	PCBs	On-site transformers likely sources; metals, VOCs, SVOCs, TPH-d, and TOG detected in soil; and PAHs detected in groundwater	No further action

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-29	IR-09	Pickling and Plate Yard	Acids	Containment vault, storm drains, and pickling tanks; potential sanitary sewer contamination; lead, PAHs, and TPH-d detected in soil; and lead and PAHs detected in groundwater	Soil remediation by excavation
D	S-OS	IR-16	Container Storage Area	PCBs from drums, oil rags, transformers, and flammable chemicals	Metals, SVOCs, PCBs, and TRPH in soil	Soil remediation by excavation
D	S-OS	IR-17	Drum Storage and Disposal Site	Industrial debris	Minor staining and debris and metals in soil and groundwater	There are no remedial actions planned
D	S-27	IR-22	Buildings 308, 368, and 369 and UST HPS-308 at Building 308	Fuels, oil, sandblast waste, and asbestos	Metals in soil and metals, VOCs, and PCBs in groundwater	There are no remedial actions planned
D	S-27 and S-43	IR-32[b]	Building 383 and Regunning Pier	Radioactive material	No significant findings	No further action
D	S-28, S-29, S-38, and S-39	IR-33	Buildings 302, 303, 304, 364, 411, and 418; USTs S-304 and S-305 at Building 304; Radiation Sites (Building 364 and 365); and SA-116 (Buildings 417, 418, and 424) and SA-125 (Building 365)	Fuels, oils, paint solvents, unknown chemicals, acids, sandblast waste, and radioactive material	Potential radiation issue; metals, VOCs, PAHs, PCBs, TPH, and TOG detected in soil, floor drain, and sump sediments; PCBs and TPH-g detected in storm drain sediments; and lead detected in groundwater	Soil remediation by excavation
D	S-28 and S-39	IR-34	Buildings 351, 351A, and 366 and Radiation Site (Building 351A)	Acid, oils, unknown chemicals, and radioactive material	Lead and VOCs detected in storm drain sediments; PCBs and VOCs detected in shallow soil; and potential radiation issue	Soil remediation by excavation

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-27	IR-35	Buildings 274, 306, 313[d], 313A[d], 322, and 372 and area bounded by Manseau, Moreell, and "E" Streets (south of Dry Dock 4) and Radiation Site (Buildings 274, 313[d], and 313A[d])	Unknown chemicals, PCBs, sandblast waste, and radioactive material	Oil staining, PCB leaks, and potential radiation issue; metals, PAHs, and PCBs detected in floor drain sediments and surface soil; and high metal levels in sandblast materials	Soil remediation by excavation
D	S-30	IR-37	Buildings 401, 435, 436, and 437; USTs S-435(1) and S-435(2) at Building 435; and SA-117 (Building 437)	Paint, solvents, and unknown chemical(s)	PCBs and TOG in surface soil samples and metals, VOCs, and pesticides and PCBs detected in storm drain sediments	There are no remedial actions planned
D	S-38	IR-44[b]	Area near Buildings 408, 409, 410(d), and 438 and SA-126 (Building 438)	Sandblast waste	Sandblast materials and debris, metals in storm drain sediments, and PAHs in sandblast waste sample	There are no remedial actions planned
D	S-OS	IR-53	Buildings 525 and 530	Oil, fuel, adhesives, paint, and unknown chemicals	Oil and/or possible chemical staining and metals, PAHs, PCBs, and TOG detected in soil	Soil remediation by excavation
D	S-43	IR-55	Building 307	Oil and unknown hazardous material	Oil leaks and soaking, underground vaults, and metals, PAHs, and TOG detected in soil	Soil remediation by excavation
D	S-39	IR-65	SA-123 (Building 324)	Carbon dioxide cylinders	Potential PCBs and chlorine contamination	There are no remedial actions planned
D	S-30 and S-37	IR-66	SA-127 (Building 407)	None	Gravel yard in the north of building is used for truck maintenance, storage, and parking and minor oil staining found	There are no remedial actions planned
D	S-37	IR-67	SA-128 (Building 439)	Metals, acids, and paints	A PCB drum and possible USTs and dry wells	There are no remedial actions planned

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-27	IR-68	Buildings 374, 376, 378, 379, and 382 and SA-131 (Building 378)	Diesel	A 10,000-gallon aboveground fuel tank on the north side of generator shed providing fuel for the engine; surface staining on platform and exposed soil inside shed	There are no remedial actions planned
D	S-OS	IR-69	SA-134 (Building 523) and SA-135 (metal shed near Building 523)	PCBs and lubricating oil	Electrical equipment contaminated by PCBs	There are no remedial actions planned
D	S-43	IR-70	SA-137 (area northeast of Building S-308)	Possible sandblast material	Stains on floor and trash and sand around building	Soil remediation by excavation
D	S-39	IR-71	SA-140 (Crane Storage Yard at corner of Manseau and Moreell Streets)	Lubricating oil and fuel	Stains in soil	There are no remedial actions planned
E	S-OS	IR-40[b]	Building 527 and Pier 2	PCBs	No significant findings	No further action
E	S-OS	IR-47[b]	Fuel Distribution Lines for AST S-505	Diesel fuel and oil	Oil identified in lines	Remove oil and lines
E	S-34, S-45, and S-OS	IR-01/21	Industrial Landfill and area southwest of Building 810	Solvents, metals, VOCs, SVOCs, and PCBs	Metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil and metals, VOCs, and PCBs detected in groundwater	Soil remediation by capping and groundwater remediation
E	S-34, S-35, S-44, and S-OS	IR-02	Bay Fill Area, Burn Disposal Area, and AST S-505 excluding IR-03 Radiation Site	Industrial debris, drums, paint containers, asphalt, asbestos, sandblast waste, waste oil and oil containing PCBs, and other unknown liquid waste	Possible groundwater migration into Bay; potential radiation issue; metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, and PCBs detected in groundwater	Soil remediation by capping and groundwater remediation

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	S-OS	IR-03	Former Oil Reclamation Ponds	Oil, unknown liquid wastes, and sandblast waste	Waste oil in upper aquifer identified; metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, and PCBs detected in groundwater	Soil remediation by excavation and groundwater remediation
E	S-45 and S-46	IR-04	Building 807 (Scrap Yard Shed)	Capacitors, scrap metal (lead and copper), drums, asbestos, batteries, and other unknown liquid wastes	No significant findings	Soil remediation by excavation
E	S-32 and S-33	IR-05	Old Transformer Storage Yard	Batteries (containing acids and metals) and PCBs	Metal residues, PCBs, and oils releases	There are no remedial actions planned
E	S-44	IR-11	Building 521 (Power Plant) and SA-142 (Building 521)	Solvents, paint, asbestos, fuel, and transformer oil	Asbestos, solvents, paints, PCBs, and leaking drum in Building 521; metals and PCBs detected in soil; and TPH detected in groundwater	Soil remediation by excavation
E	S-32, S-33, and S-34	IR-12	Disposal Trench and Salvage Yard (Building 702[d])	Oil, acids, bases, solvents, LBP, paint containers, sludge, and other unknown wastes	Oil and liquid chemical contamination; staining; meals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and VOCs, PAHs, TPH-g, TPH-d, and TOG detected in groundwater	Soil remediation by excavation
E	S-35	IR-13	Old Commissary Site (former Buildings 524[d] and 803[d])	Fuels, oils, PCBs, and miscellaneous waste	Potential contamination from drums, waste piles, and transformers; metals and PCBs detected in soil; and metals in groundwater	Soil remediation by excavation

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	S-40, S-41, and S-44	IR-14	Oily Liquid Waste Disposal Site and Buildings 506[d], 510[d], 510A[d], 518, and 529[d]	Oil, mixed waste, miscellaneous debris, sandblast waste, and radioactive material	Oil, mixed waste, sandblast waste, staining, sludge, and debris identified; metals in groundwater; and potential radiation issue	Soil remediation by excavation and groundwater remediation
E	S-44	IR-15	Oily Waste Ponds and Incineration Tank	Waste oil and miscellaneous debris	No surficial oil pond or incinerator tank remaining; disposal site for oil and debris; PAHs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, SVOCs, TPH-g, TPH-d, TOG detected in groundwater	Soil remediation by excavation and groundwater remediation
E	S-30, S-31, S-32, S-35, and S-36	IR-36	Buildings 371, 400, 404A, 405, 406, 413, 414, 704, 709, and 710 and area west of Building 405; USTs HPA-14, HPA-15, S-711, S-712, S-713, S-714, and S-715 at Building 709	Oils, PCBs, solvents, unknown chemicals, and miscellaneous debris	Miscellaneous debris, scrap metal, PCBs, and leaking equipment; staining and poor housekeeping; VOCs, SVOCs, PCBs, TPH-g, and metals in soil; and VOCs, SVOCs, TPH-g, and TOG in groundwater	Soil remediation by excavation
E	S-OS	IR-52	Railroad right-of-way (off-site west of facility)	Paint, resins, oil, and miscellaneous debris	Soil staining and random waste dumping; potential chemical treatment of lumber and railroad ties; and metals, PCBs, and TOG detected in soil	Removal of rubbish along right-of-way, cap with asphalt, and restrict access
E	S-44	IR-54[b]	Building 511A(d)	Miscellaneous debris	No significant findings	No further action
E	S-45	IR-56	Area VII and Railroad Tracks	Pentachlorophenol (wood preservative)	Metals, VOCs, and PAHs detected in soil	Soil remediation by excavation
E	S-45	IR-72	SA-146 (Building 810) and UST S-801 and S-802 at Building 811	Solvents, acids, greases, soil cuttings, and cleaning agents	Hydrocarbon material stored at the site and spills and leaks observed	Soil remediation by excavation

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	S-OS	IR-73	SA-150 (asphalt batch plant northwest of Pier 2)	Diesel fuel and asphalt stock	Stained and damaged asphalt	There are no remedial actions planned
D and E	S-40, S-41, S-42, and S-44	IR-38[b]	Buildings 500, 506[d], 507[d], 509[d], 510[d], and 517[d]; UST S-508 at Building 500; and Radiation Sites (Buildings 506[d], 507[d], 508[d], 509[d], 510[d], and 517[d])	Building 500: none All other buildings: radioactive material	Potential radiation issue and metals and TOG detected in soil	Soil remediation by excavation
D and E	S-35 and S-40	IR-39	Buildings 505, 519[d], 707, 708, and IR-13 sites and Radiation Site (Buildings 707 and 708)	Unknown chemicals and radioactive material	Potential radiation issue and PCBs, TPH-g, TPH-d, and TOG detected in soil	Remediation at Building 707 Concrete Pad (radiation)
A, B, C, D, and E	NA	IR-45[b]	Steam Lines (utility investigation)	Waste oils	Fluids in lines to be removed	Remove or abandon in place
B and C	N-21 and N-23	IR-49	Fuel Distribution Lines at Buildings 203 and 205 (utility investigation)	Fuel and fuel oils	Lines contained fuel and other fluids	Removal of fuel lines or abandon in place
B, C, D, and E	NA	IR-50	Storm Drains and Sanitary Sewer Lines (utility investigation)	Unknown	Contaminants in sediments in storm drain catch basin	Remove sediments
A	NA	SI-50[b]	Storm Drains and Sanitary Sewer Lines (utility investigation)	Unknown	Contaminants in sediments in storm drain catch basin	Remove sediments
B, C, D, and E	NA	IR-51	Former Transformer Sites	PCBs	Stained soil in Parcels B and C	Remove transformer or abandon in place
A	NA	SI-51[b]	Former Transformer Sites	PCBs	No evidence of stained soil or leaking from existing equipment	Remove transformer or abandon in place
F	NA	IR-78	Underwater portion of HPS (includes tidal and subtidal areas)	Metals, PAHs, SVOCs, and pesticides and PCBs	Contaminants were found in off-shore sediments	Recommendations presented in FS

TABLE 5-1 (Continued)

SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT HPS[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
FUDS	Not in HPS boundary	IR-74[c]	Radiation site (Building 815, a FUDS)	None – radiation clearance needed for Building 815	Not yet performed	Further investigation may be required
FUDS	Not in HPS boundary	IR-75[c]	Radiation site (Building 820, a FUDS)	None – radiation clearance needed for Buildings 820	Not yet performed	Further investigation may be required
FUDS	Not in HPS boundary	IR-76	Area surrounding Buildings 830 and 831 (FUDS) and radiation site (Buildings 830 and 831)	None – radiation clearance needed for Buildings 830 and 831	Not yet performed	Soil remediation by excavation

Notes

AST	Aboveground storage tank	PAH	Polynuclear aromatic hydrocarbon	SVOC	Semivolatile organic compound
City	City of San Francisco	PCB	Polychlorinated biphenyl	TOG	Total oil and grease
ERA	Ecological risk assessment	POTW	Publicly owned treatment works	TPH	Total petroleum hydrocarbons
FS	Feasibility study	RI	Remedial investigation	TPH-d	Total petroleum hydrocarbons as diesel
FUDS	Formerly used defense sites	ROD	Record of Decision	TPH-g	Total petroleum hydrocarbons as gasoline
HPS	Hunters Point Shipyard	SA	Site assessment	UST	Underground storage tank
IRP	Installation Restoration Program	SI	Site inspection	VOC	Volatile organic compound
LBP	Lead-based paint				

a All sites in Table 5-1 are being evaluated under the HPS IRP.
Designation of a site as "installation restoration (IR)" indicates that a site has undergone preliminary assessment (PA) and SI level investigation under the Comprehensive Environmental Response, Compensation, and Liability Act process. The site has been recommended for further investigation at the RI level. The recommendation is based on the detected presence of contamination by hazardous substances and the need to adequately characterize its nature and extent of contamination.
Radiation sites with the exception of IR-02, IR-07, and IR-18, are all at the SI level of investigation and may be listed within an IR site geographic limits.
FUDS, including sites resulting from the base-wide facility audit, are not included in this table.

b Designation of a site as "SI" denotes that site has undergone PA and SI level investigation. No further investigation to define nature and extent of contamination is recommended.

c Radiation sites which have undergone PA and are proposed for SI level investigation to determine if release of radioactive materials has occurred and characterization is necessary.

d The building has been demolished.

Source:

See Appendix G parcel-specific references.

TABLE 5-2A

PAST NAVY ANNUAL HAZARDOUS WASTE GENERATION RATES (1942-1974)[a]
AND PARCEL QUANTITIES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Hazardous Waste Type	Annual Rate (kg/yr)	Annual Rate (g/yr)
A	101	Photograph developing chemicals	74,000	18,500
		Total	**74,000**	**18,500**
B	111(d)/112(d)	Emulsifying agents and waste oil	96,000	24,000
B	113	Oils and sulfur hexafluoride	16,700	N/A
B	124	Sulfuric acid-contaminated water	48,000	12,000
		Total	**160,700**	**36,000**
C	203	Dilute sulfuric acid, salt solutions, xylene, paint, and asbestos	203,000	180,000
C	215	Detergent, oil, and grease	312,000	78,000
C	217	Paints, oils, acetylene, ethylene glycol, and propane	28,800	7,200
C	231	Acids, solvents, and waste oil	2,060,000	515,000
C	253	Sodium hydroxide, paints, solvents, and Safety-Kleen	62,000	15,500
C	258	Acids and sodium hydroxide	888,000	222,000
C	270	Sodium hydroxide	48,000	12,000
C	271	Paint sludge, paint, and D-Kleen	44,400	11,100
C	272	Steem-Kleen	104,000	26,000
C	280	Sodium phosphate tribasic and acids	240,000	60,000
		Total	**3,990,200**	**1,126,800**
D	351	Photo reproduction and developing chemicals	29,600	7,400
D	351A (352)	Detergents, thinners, and solvents	104,000	26,000
D	411	Acids	360,000	90,000
D	422/423	Acids and primers	720,000	180,000
D	435	Paints and paint sludge	44,400	11,100
D	436	Sodium hydroxide and detergent	4,000	1,000
		Total	**1,262,000**	**315,500**

TABLE 5-2A (Continued)

PAST NAVY ANNUAL HAZARDOUS WASTE GENERATION RATES (1942-1974)[a]
AND PARCEL QUANTITIES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Building	Hazardous Waste Type	Annual Rate (kg/yr)	Annual Rate (g/yr)
E	Former Oil Reclamation Ponds	Waste petroleum products	4,000,000	1,000,000
		Total	**4,000,000**	**1,000,000**
Site-Wide	Berths and Dry Docks	Radium dials	108	NA

Notes:

g/yr Grams per year

kg/yr Kilograms per year

Navy U.S. Department of the Navy

a The annual rate is an extrapolated quantity based on historical information and may or may not reflect actual past Navy hazardous waste generation quantities. Annual rate assumptions: 8-hour day, 260-day work year (37 weeks), and 1 gallon equals 4 kilograms (H_2O). Also see Section 5.1.2.

Source:

PRC. 1996b.

TABLE 5-2B

1997 TENANT SURVEY HAZARDOUS MATERIAL PARCEL QUANTITIES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Hazardous Material	Estimated Quantity[a] (kg)
A	Adhesives/sealants	98.02
A	Aerosol sprays, miscellaneous	6.8
A	Cleaning products	37.4
A	Paints	1,480.6
A	Photochemical solutions	129.5
A	Solvents	577.3
A	Stains, water-based	10.2
A	WD-40	0.57
A	TPH	**388.30**
	Total[b]	**2,340.39**
B	Acids	5.55
B	Adhesives/coating/sealants	15.3
B	Ammoniums	0.55
B	Colorants	40.1
B	Corrosives	17.0
B	Cupric sulfate	0.45
B	Ferric chloride	0.45
B	Fiber reactive dyes	0.57
B	Magnaflux magnetic powder	34.0
B	Paints	266.1
B	Sodium hydroxide	1.7
B	Solutions	102
B	Solvents	283.1
B	Swimming pool cleaners	15.4
B	WD-40	6.8
B	Xtender	27.2
B	ZEP Flash floor cleaner	17.0
B	TPH	**1,525.9**
	Total[b]	**833.27**
C	Adhesives/sealants	107.1

TABLE 5-2B (Continued)

1997 TENANT SURVEY HAZARDOUS MATERIAL PARCEL QUANTITIES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Hazardous Material	Estimated Quantity[a] (kg)
C	Antifreeze	561
C	Asbestos	13,636
C	Cleaning products	57.8
C	Corrosives	17.0
C	Detergents	382.5
C	K-4 Catalyst	51
C	Lead	15,910
C	Paints	10.2
C	Refrigerant	205.7
C	Santrol 35	187.0
C	Solvents	282.2
C	TPH	**19,187.3**
	Total[b]	**31,407.5**
D	Acids	98.0
D	Adhesives/sealants	1,710
D	Ammonia	51
D	Ammoniums	6.8
D	Antifreeze	27.2
D	Corrosion inhibitor	374
D	Corrosives	112
D	Ether	0.85
D	Heat transfer fluid	17
D	Isopropyl alcohol	6.8
D	Lead	4.8
D	Paints	285.64
D	Potassium cyanide	0.1
D	Printing ink	3.4
D	Solvents	652.6
D	TPH	**7,074**
	Total[b]	**3,350.19**

TABLE 5-2B (Continued)

1997 TENANT SURVEY HAZARDOUS MATERIAL PARCEL QUANTITIES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Hazardous Material	Estimated Quantity[a] (kg)
E	Adhesives/sealants	20.4
E	Antifreeze	20.4
E	Hydraulic fluid (fire resistant)	17
E	Paints	139.4
E	Solvents	50.68
E	Starting fluid	15.4
E	TPH	**19,764.05**
	Total[b]	**263.28**

Notes:

kg Kilograms
TPH Total petroleum hydrocarbons

a Most of the hazardous materials stored are substances in which a chemical or material contains a certain percentage of a CERCLA-regulated substance. The information required to calculate exact quantities was unavailable and not usually listed on containers. For the purpose of calculating parcel quantities, all substances were considered pure hazardous materials. Thus, the quantities calculated are extremely conservative and actual values are lower. Also see Section 5.2.1.

b Total (hazardous materials) does not include the total TPH (in bold) for each parcel.

Source:

Compiled from Appendix H.

TABLE 5-2C

NOTICE OF PRESENCE OF HAZARDOUS MATERIALS ABOVE REPORTABLE QUANTITY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

CFR 40 Section 373 requires the Navy to provide notice of the type and quantity of hazardous substances for 1 year or more, in quantities greater than or equal to 1,000 kilograms or the hazardous substances' CERCLA reportable quantity, or known to have been released or disposed of, and the time at which such storage, release, or disposal took place. At this time, only two facilities fit this requirement. The table below provides this information.

Parcel	Building No.	Date Surveyed	Tenant	Item	Estimated Quantity	Units	Substance	Quantity (kg)	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000kg
D	Dry Dock 4	09/15/97	Astoria Metals	Asbestos	30,000	lb.	Asbestos	13,636	S	NA	0.454	Yes
C	372	09/15/97	Astoria Metals	Lead	35,000	lb.	Lead	15,910	S	NA	4.54	Yes

Notes:

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act.
CFR Code of Federal Regulation
kg Kilogram
lb. Pound
NA Not applicable
RQ Reportable quantity
S Stored

TABLE 5-3

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
101	Yes		F		Between February and June 1995, 2,136-lf TSI was repaired and encapsulated on the first and second floors and in the crawl space and basement areas; 770-ft^2 TSI from two separate pipe runs was repaired and encapsulated; and 4,804-lf TSI from two separate pipe elbows was repaired and encapsulated. In addition, between February and June 1995, 1,906-lf of debris was removed.	02/95 to 06/95
102	No		F		Between February and June 1995, 115-lf and 6-ft^2 TSI was repaired and encapsulated on the first and second floors. In addition, 120-lf TSI was removed or repaired and encapsulated in an unspecified area during this time period.	02/95 to 06/95
103	Yes		F	NF	On December 15, 1995, 409-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 103. On December 29, 1995, 1500-ft^2 high friable ACM was repaired or removed from Room 2104. In addition, on January 4, 1996, an unspecified amount of high friable, damaged ACM was abated in Room 2115.	12/15/95, 12/29/95, and 01/04/96
104	Yes	NF	F	NF	On January 4, 1996, 943-lf high friable, damaged ACM was repaired and encapsulated in Room 1115 and 900-ft^2 high friable ACM was repaired or removed from Room 1115.	01/04/96
109	No	NF	F	NF	On November 30, 1997, 3-lf high friable, damaged ACM and 1-ft^2 high friable ACM was repaired and encapsulated in unspecified areas throughout Building 109.	11/30/97
110	Yes		F		Between February and June 1995, 695-lf TSI from three separate pipe runs was repaired and encapsulated and 82-ft^2 TSI from three separate pipe elbows was repaired and encapsulated.	02/95 to 06/95
113	No		F	NF	On June 19, 1996, 175-lf and 50-ft^2 moderate friable damaged ACM was repaired and encapsulated in unspecified areas of Building 113.	06/19/96

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
114 (113A)	Yes		F	NF	On February 11, 1996, 14-lf high friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 114.	02/11/96
115	Yes		F	NF	On February 8, 1996, 185-lf high friable, damaged ACM was repaired and encapsulated or removed from the eastern half of Building 115.	02/08/96
116	Yes		F	NF	On an unspecified date in 1996, 798-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 116.	1996
117	Yes		F	NF	On January 14, 1996, high friable, damaged ACM was repaired and encapsulated in Rooms 101, 103, and 109. On March 8, 1996, high friable damaged ACM was repaired and encapsulated in the crawl space of Building 117. A total of 517-lf high friable, damaged ACM was repaired and encapsulated in these areas.	01/14/96 and 03/08/96
120	Yes		F	NF	On March 4, 1996, 4-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 120.	03/04/96
121	No	NF	F	NF	On October 9, 1995, 26-lf high friable, damaged ACM was repaired and encapsulated or removed in the office area of Building 121.	10/09/95
122[d]	No			NF	No remediation required.	NA
123	Yes		F	NF	On March 12, 1996, 825-lf high friable ACM was repaired and encapsulated or removed from unspecified areas throughout Building 123.	03/12/96
125	Yes	NF	F	NF	On January 15, 1997, 30-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 125.	01/15/97
128	Yes			F	On August 5, 1996, 14-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 128.	08/05/96
129	No		F	NF	On January 29, 1996, 3-lf high friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 129.	01/29/96

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
130	No		F	NF	On unspecified dates, 171-lf moderate friable, damaged ACM was repaired and encapsulated and 6-ft^2 moderate friable ACM was removed from unspecified areas of Building 130.	Unspecified
131	No			F	On January 18, 1997, 125-ft^2 moderate friable, damaged ACM was repaired and encapsulated and 1-lf high friable, damaged ACM was removed from unspecified areas of Building 131.	01/18/97
132	No		F	NF	On March 27, 1996, 12-lf high friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 132.	03/27/96
133[d]	No			NF	No remediation required.	NA
134	Yes		F	NF	On an unspecified date, 399-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 134.	Unspecified
135[d]	No			NF	No remediation required.	NA
140	No			F	Remediation not completed. Remediation on hold per instructions of the Hunters Point Shipyard Caretaker Site Office.	To be completed.
141	No		F	NF	On May 21, 1996, 23-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 141.	05/21/96
144[d]	No			NF	No remediation required.	NA
145[d]	No			NF	No remediation required.	NA
146	No		F	NF	On October 8, 1995, 30-lf moderate friable, damaged ACM was repaired and encapsulated in the warehouse rafters of Building 146.	10/08/95
150[d]	No			NF	No remediation required.	NA
154[d]	No			NF	No remediation required.	NA

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
156	No		F	NF	On March 1, 1996, 81-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 156.	03/01/96
157	No		F	NF	On February 16, 1996, 1-lf moderate friable, damaged ACM was repaired and encapsulated in a small room in the north corner of Building 157.	02/16/96
158[d]	Yes			NF	No remediation required.	NA
159	No		F	NF	On March 4, 1997, 95-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 159.	03/04/97
163	No		F		On March 4, 1997, 22-lf and 1-ft^2 high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 163.	03/04/97
203	Yes	NF	F	NF	On October 8, 1996, 25-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 203. Between February and June 1995, 813-ft^2 TSI was repaired and encapsulated from ducts, gaskets, packing, hoses, and areas near tanks. Between February and June 1995, 10-lf and 134-ft^2 TSI was repaired and encapsulated from pipe elbows; 490-lf and 188-ft^2 TSI was repaired and encapsulated from pipe runs; and 35-ft^2 TSI was repaired and removed or encapsulated from areas near tanks.	10/08/96 and 02/95 to 06/95
204[d]	No			NF	No remediation required.	NA
205	No		F	NF	On July 22, 1996, 16-lf high friable damaged ACM was repaired and encapsulated in an unspecified area of Building 205.	07/22/96
207	No	F	F	F	On March 14, 1996, 28-lf moderate friable damaged ACM was repaired and encapsulated or removed from the boiler room.	03/14/96
208	No		F	NF	On April 25, 1996, 45-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 208.	04/25/96

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
211	Yes		F	F	On an unspecified date, 48-lf and 111-ft^2 high friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 211.	Unspecified
214	No	NF	F	NF	On an unspecified date, 739-lf high friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 214.	Unspecified
215	Yes	NF	F	NF	On an unspecified date, 45-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 215.	Unspecified
217	No		F	NF	On September 19, 1996, 862-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 217.	09/19/96
218[d]	No			NF	No remediation required.	NA
219[d]	No			NF	No remediation required.	NA
224[d]	No			NF	No remediation required.	NA
225	No		F	NF	On May 21, 1996, 28-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 225.	05/21/96
226	No		F	NF	On June 19, 1996, 2-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 226.	06/19/96
228	No		F	F	On April 17, 1996, 294-lf high friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 228.	04/17/96
229[d]	Yes			NF	No remediation required.	NA
230[b]	Yes		F	NF	On June 18, 1996, 80-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 230.	06/18/96

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
231	No	F	F	F	On January 12, 1996, 687-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas throughout Building 231. On an unspecified date, 49-ft^2 high friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 231. On an unspecified date, 288-ft^2 high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 231.	01/12/96 and unspecified
234	No	NF	F	NF	On March 4, 1997, 20-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 234.	03/04/97
236[d]	Yes			NF	No remediation required.	NA
241	No		F	NF	On an unspecified date, 46-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 241.	Unspecified
251	No		F	NF	On an unspecified date, 227-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 251.	Unspecified
252[d]	No			NF	No remediation required.	NA
253	Yes	F	F	F	On an unspecified date, 346-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 253.	Unspecified
258	No		F	NF	On November 17 and 21, 1995, 146-lf high friable, damaged ACM was repaired and encapsulated in the mezzanine, second floor, third floor, fourth floor, acid pit areas, and rafters.	11/17/95 and 11/21/95
270	Yes		F	NF	On January 27, 1997, 213-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas throughout Building 270.	01/27/97
271	Yes		F	NF	On January 27, 1997, 77-lf and 300-ft^2 moderate friable, damaged ACM was repaired and encapsulated in unspecified areas throughout Building 271.	01/27/97

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
272	Yes		F	NF	On March 3, 1996, 268-lf moderate friable, damaged ACM was repaired and encapsulated in the east loft, office, room on the west wing, and woodworking room on the east side of Building 272.	03/03/96
273	Yes		F	NF	On March 4, 1997, 2-lf high friable, damaged ACM was removed from unspecified areas at Building 273.	03/04/97
274[d]	No	NF		NF	No remediation required.	NA
275	Yes		F		On June 18, 1996, 83-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 275.	06/18/96
280	No		F		On March 4, 1997, 19-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 280.	03/04/97
281	No		F	NF	On March 4, 1997, 4-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 281.	03/04/97
282[d]	No			NF	No remediation required.	NA
300	Yes			NF	On March 4, 1997, 1-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 300. In addition, on March 4, 1997, 2-ft^2 high friable, damaged ACM was removed from an unspecified area of Building 300.	03/04/97
301	Yes		F	NF	On March 4, 1997, 87-lf low friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 301. Between February and June 1995, 45-lf TSI was repaired and encapsulated from pipe runs.	03/04/97 and 02/95 to 06/95
302	Yes		F	F	On January 12, 1996, 626-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 302.	01/12/96
303	No		F	NF	On March 4, 1997, 369-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 303.	03/04/97

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
304	No		F		On March 4, 1997, 18-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 304.	03/04/97
306	Yes			F	Abatement on hold due to PWC unable to secure electrical power to an utility vault. Asbestos warning labels posted.	To be completed.
307[d]	Yes			NF	No remediation required.	NA
308[d]	Yes			NF	No remediation required.	NA
311	Yes		F	NF	On March 4, 1997, 9-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 311.	03/04/97
323[d]	Yes			NF	No remediation required.	NA
324	No		F	NF	On October 24, 1995, 39-lf moderate friable, damaged ACM was repaired and encapsulated in the rafters.	10/24/95
351	No		F	NF	On January 23, 1996, 75-lf moderate friable, damaged ACM was repaired and encapsulated and 10-ft^2 high friable, damaged ACM was removed from unspecified areas throughout Building 351.	01/23/96
351A (352)	No		F	NF	On November 3, 1995, 301-lf high friable, damaged ACM was repaired and encapsulated or removed from the attic.	11/03/95
363	Yes		F	NF	On August 4 and 11, 1996, 99-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 363.	08/04/96 and 08/11/96
364	Yes		F	NF	On August 6, 1996, 1-lf high friable, damaged ACM was removed from an unspecified area of Building 364.	08/06/96
365	No		F	F	On an unspecified date, 79-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 365.	Unspecified

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
366	Yes		F	F	On July 21, 1996, 110-lf high friable, damaged ACM was repaired and encapsulated or removed from an unspecified area of Building 366.	07/21/96
367[d]	Yes			NF	No remediation required.	NA
368	No		F	NF	On June 18, 1996, 64-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 368.	06/18/96
369	No		F	NF	On March 4, 1997, 11-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 369.	03/04/97
370	No		F	F	On March 4, 1997, 48-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 370.	03/04/97
371[d]	Yes			NF	No remediation required.	NA
372[d]	Yes			NF	No remediation required.	NA
376[d]	No	NF		NF	No remediation required.	NA
377[d]	No			NF	No remediation required.	NA
378[d]	No			NF	No remediation required.	NA
379[d]	No			NF	No remediation required.	NA
380[d]	No			NF	No remediation required.	NA
381[d]	Yes			NF	No remediation required.	NA
383[d]	Yes	NF		NF	No remediation required.	NA
384[d]	No			NF	No remediation required.	NA
385[d]	No			NF	No remediation required.	NA

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
400	No		F	NF	On an unspecified date, 104-lf high friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 400.	Unspecified
401	Yes	NF	F	F	On an unspecified date, 67-lf moderate friable, damaged ACM was repaired and encapsulated in an unspecified area of Building 401.	Unspecified
402[d]	No			NF	No remediation required.	NA
404	Yes		F	F	On March 4, 1997, 4-lf and 64-ft^2 moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 404.	03/04/97
405[d]	Yes			NF	No remediation required.	NA
406	Yes			NF	On an unspecified date, 30-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas at Building 406.	Unspecified
407	Yes		F	NF	On March 4, 1997, 91-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 407.	03/04/97
408[d]	No			NF	No remediation required.	NA
409[d]	No			NF	No remediation required.	NA
410[d]	No			NF	No remediation required.	NA
411	Yes		F	NF	On May 5 and 6, 1996, 976-lf moderate friable, damaged ACM was repaired and encapsulated or removed from the first floor and doll house shop. Between February and June 1995, three piles of fire bricks were removed, cleaned, and encapsulated.	05/05/96, 05/06/96, and 02/95 to 06/95
412[d]	No			NF	No remediation required.	NA
413	Yes		F	NF	On October 10, 1995, 26-lf moderate friable damaged ACM was repaired and encapsulated in the warehouse rafters.	10/10/95

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
414	No		F	NF	On October 10, 1995, 21-lf moderate friable, damaged ACM was repaired and encapsulated in the warehouse rafters.	10/10/95
417[d]	Yes			NF	No remediation required.	NA
418	Yes		F	NF	On March 4, 1997, 28-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 418.	03/04/97
419[d]	No			NF	No remediation required.	NA
420[d]	No			NF	No remediation required.	NA
421[d]	No			NF	No remediation required.	NA
422[d]	No			NF	No remediation required.	NA
423[d]	No			NF	No remediation required.	NA
424[d]	Yes			NF	No remediation required.	NA
435[d]	Yes			NF	No remediation required.	NA
436[d]	Yes	NF		NF	No remediation required.	NA
437[d]	No			NF	No remediation required.	NA
438[d]	No			NF	No remediation required.	NA
439[d]	No			NF	No remediation required.	NA
500	No	NF	F	F	On an unspecified date, 1045-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 500.	Unspecified
505	No		F	NF	On an unspecified date, 505-lf high friable, damaged ACM was repaired and encapsulated or removed from unspecified areas of Building 505 and 119-ft^2 moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 505.	Unspecified dates

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
521	No		F	NF	Most of the damaged TSI is located at floor level and in piping channels. Drainage consists of torn TSI jackets that are also flaking and falling off. There is extensive damage to insulation in the channels outside of the building. Asbestos warning labels posted.	To be completed.
523[d]	No			NF	No remediation required.	NA
525[d]	No			NF	No remediation required.	NA
526	No		F	F	On March 4, 1997, 25-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 526.	03/04/97
527[d]	No			NF	No remediation required.	NA
528[d]	No			NF	No remediation required.	NA
530	No		F	F	On March 4, 1997, 12-lf moderate friable ACM was repaired and encapsulated in unspecified areas of Building 530.	03/04/97
600	No		F	NF	On March 4, 1997, 13-lf high friable, damaged ACM was removed and 50-ft^2 moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 600.	03/04/97
606[d]	Yes			NF	No remediation required.	NA
704[d]	Yes			NF	No remediation required.	NA
707	No		F	NF	On October 9, 1996, 30-lf moderate friable, damaged ACM was repaired and encapsulated in unspecified areas of Building 707.	10/09/96
708	No			NF	On October 9, 1996, 200-ft^2 high friable, damaged ACM was removed from an unspecified area of Building 708.	10/09/96
709	No			F	On March 4, 1997, 18-ft^2 high friable, damaged ACM was removed from an unspecified area of Building 709.	03/04/96

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
710[d]	No			NF	No remediation required.	NA
809[d]	Yes			NF	No remediation required.	NA
810[d]	No			NF	No remediation required.	NA
811[d]	Yes			NF	No remediation required.	NA
813[b]	Yes			F	Between February and June 1995, PWC remediated an unspecified amount of ACM from pipe runs and elbows at Building 813.	02/95 to 06/95
816[b]	No		F		Between February and June 1995, 95-lf TSI was repaired, cleaned, and encapsulated from pipe runs; 20-ft^2 TSI was repaired, cleaned, and encapsulated from pipe elbows; and 10-ft^2 TSI was repaired, cleaned, and encapsulated from an area near a tank.	02/95 to 06/95
822[d]	No			NF	No remediation required.	NA
823[d]	No			NF	No remediation required.	NA
901[b]	No		F		Between February and June 1995, 15-lf TSI from a pipe run was repaired and cleaned and 1,000-lf pipe insulation debris was removed, cleaned, and encapsulated.	02/95 to 06/95
916[b]	Yes		F		Between February and June 1995, 707-ft^2 from a pipe elbow, aircell, and duct wrap was repaired and encapsulated and 110-lf TSI from a pipe run was repaired and encapsulated.	02/95 to 06/95
921[b]	No		F		Between February and June 1995, 10-ft^2 TSI from pipe elbows and 14-ft^2 TSI from a tank cover were repaired and encapsulated, and a 9 ft^2 exhaust duct cover was repaired and encapsulated.	02/95 to 06/95
A[b]	No		F		Between February and June 1995, a 35-ft^2 duct cloth was repaired and encapsulated.	02/95 to 06/95
B[b]	No		F		Between February and June 1995, a 533-ft^2 duct coating was repaired and the loose asbestos was removed and encapsulated.	02/95 to 06/95

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
C[b]	No		F		Between February and June 1995, a 325-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
D[b]	No		F		Between February and June 1995, a 30-ft^2 duct cloth was repaired and encapsulated.	02/95 to 06/95
E[b]	No		F		Between February and June 1995, a 5-ft^2 duct cloth was repaired and encapsulated.	02/95 to 06/95
F[b]	No		F		Between February and June 1995, a 16-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
H[b]	No		F		Between February and June 1995, a 170-ft^2 duct cloth was repaired, cleaned, and encapsulated.	02/95 to 06/95
I[b]	No		F		Between February and June 1995, a 64-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
J[b]	No		F		Between February and June 1995, a 250-ft^2 duct wrap was cleaned, repaired, and encapsulated and a 12-ft^2 aircell wrap was repaired and encapsulated.	02/95 to 06/95
K[b]	No		F		Between February and June 1995, a 16-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
L[b]	No		F		Between February and June 1995, a 300-ft^2 duct cloth and 10-ft^2 vent duct wrapping were repaired and encapsulated, and 20-ft^2 TSI from a pipe run was repaired and loose asbestos was removed and encapsulated.	02/95 to 06/95
N[b]	No		F		Between February and June 1995, a 100-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
O[b]	No		F		Between February and June 1995, a 100-ft^2 duct cloth was repaired and encapsulated.	02/95 to 06/95
R[b]	No		F		Between February and June 1995, a 40-ft^2 duct insulation was repaired and loose asbestos was removed and encapsulated.	02/95 to 06/95
S[b]	No		F		Between February and June 1995, a 21-ft^2 duct covering was repaired and	02/95 to 06/95

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
					encapsulated.	
T[b]	No		F		Between February and June 1995, a 90-ft^2 duct cloth covering was repaired and encapsulated.	02/95 to 06/95
U[b]	No		F		Between February and June 1995, a 250-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
W[b]	No		F		Between February and June 1995, a 50-ft^2 duct cloth was repaired and encapsulated.	02/95 to 06/95
X[b]	No		F		Between February and June 1995, a 30-ft^2 duct wrap was repaired and loose asbestos was removed and encapsulated, and 1-ft^2 cloth duct tape was repaired and encapsulated.	02/95 to 06/95
R-26[b]	No		F		Between February and June 1995, a 14-ft^2 duct covering was repaired and encapsulated.	02/95 to 06/95
R-33[b]	No		F		Between February and June 1995, an 8-ft^2 duct covering and 2-ft^2 aircell wrap were repaired and encapsulated.	02/95 to 06/95
R-36[b]	No		F		Between February and June 1995, an 80-ft^2 duct covering and 2-ft^2 aircell wrap were repaired and encapsulated.	02/95 to 06/95
R-36A[b]	No		F		Between February and June 1995, a 12-ft^2 duct tape, 2-ft^2 aircell wrap, 1-ft^2 fiber reinforced tape, and 1-ft^2 piece of white paper were repaired and encapsulated.	02/95 to 06/95
R-39[b]	No		F		Between February and June 1995, a 10-ft^2 duct covering and 2-ft^2 aircell wrap were repaired and encapsulated.	02/95 to 06/95
R-45[b]	No		F		Between February and June 1995, a 4-ft^2 insulation paper was repaired and encapsulated.	02/95 to 06/95
R-66A[b]	No		F		Between February and June 1995, a 150-ft^2 duct cloth was cleaned, repaired, and encapsulated.	02/95 to 06/95
R-78[b]	No		F		Between February and June 1995, a 1-ft^2 aircell wrap, 7-ft^2 duct paper, and 7-ft^2	02/95 to 06/95

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building	Used[a]	Asbestos			Asbestos Abatement Information	Remediation Dates
		Surf.	TSI	Misc.		
					duct tape were repaired and encapsulated.	
R-95[b]	No		F		Between February and June 1995, a 100-ft^2 duct covering was cleaned, repaired, and encapsulated.	02/95 to 06/95
R-97[b]	No		F		Between February and June 1995, a 10-ft^2 duct cloth and 2-ft^2 aircell sheet was repaired and encapsulated.	02/95 to 06/95
R-118[b]	No		F		Between February and June 1995, a 200-ft^2 duct cloth was repaired, removed, and encapsulated.	02/95 to 06/95

Notes:

ACM Asbestos-containing material
F Friable
ft^2 Square feet
lf Linear feet
Misc. Miscellaneous
NA Not applicable
NF Nonfriable
PWC Navy Public Works Center
R Residence housing (Parcel A)

Notes (Continued):

Surf. Surfacing
TSI Thermal system insulation

a Currently used buildings
b Asbestos type determined from asbestos abatement information description.
c Buildings not listed are either demolished or were not investigated for ACM.
d Asbestos remediation is required only if ACM is friable.

TABLE 5-3 (Continued)

BUILDINGS WITH DAMAGED, FRIABLE, AND ACCESSIBLE ASBESTOS[c, e]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

e This table may differ from subparcel reports in Volume II. Information in this table is more current than information in the subparcel reports.

Sources:

ECC. 1995.
MINS. 1994a.
PWC. 1997.
Tetra Tech. 1993b.

TABLE 5-4A

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
100	Substation AA	Xfmr	L	Unknown	37.5	V-4	83	1992	Disposed
100	Substation A	OCB	L	Unknown	37.5	V-5	<1	Unknown	Unknown
101	Substation GH-5	Xfmr	L	Unknown	450	40	Unknown	Unknown	Disposed
101	Substation GH-5	O Sw	L	Unknown	N/A	GH-116	<1	N/A	Out of service
101	Substation GH-5	OFC	L	Unknown	5	GH-117	6	1998	Disposed
101	Substation GH-5	OFC	L	Unknown	5	GH-118	9	1998	Disposed
101	Substation GH-5	Xfmr	L	Unknown	Unknown	GH-119	<1	N/A	Out of service
113	Substation S	Xfmr	L	Unknown	300	3	Unknown	Unknown	Disposed
113	Substation S	Xfmr	L	Unknown	150	V-120	<1	N/A	Out of service
122	Station V	Xfmr	L	800	1,667	V-1	5	1995	Disposed
122	Station V	Xfmr	L	210	300	V-105	6	1995	Disposed
122	Station V	Xfmr	L	100	150	V-106	10	1995	Disposed
122	Station V	OCB	L	Unknown	N/A	V-107	242	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-109	182	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-110	190	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-111	209	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-112	135	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-113	407	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-114	125	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-115	558	1992	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
122	Station V	OCB	L	Unknown	N/A	V-116	782	1992	Disposed
122	Substation V	OCB	L	Unknown	N/A	V-117	3	N/A	Abandoned
122	Station V	OCB	L	Unknown	N/A	V-118	228	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-119	121	1992	Disposed
122	Station V	Xfmr	L	800	1,667	V-2	3	N/A	Out of service
122	Station V	Xfmr	L	800	1,667	V-3	5	1995	Disposed
122	Station V	OCB	L	Unknown	N/A	V-300	212	1992	Disposed
122	Station V	OCB	L	Unknown	N/A	V-301	180	1992	Disposed
123	Substation T	Xfmr	L	Unknown	500	4	Unknown	Unknown	Disposed
123	Substation T	Xfmr	L	Unknown	200	5	Unknown	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-551	3,303	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-553	3,391	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-555	2,618	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-556	573	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-557	451	Unknown	Disposed
123	Substation T	OCB	L	Unknown	N/A	T-558	2,842	Unknown	Disposed
130	Unknown	Xfmr	L	Unknown	Unknown	P707	22	1998	Disposed
130	Unknown	Xfmr	L	Unknown	Unknown	None	5.9	1998	Disposed
131	Substation U	Xfmr	L	Unknown	200	6	Unknown	Unknown	Disposed
131	Substation U	Xfmr	L	Unknown	150	7	Unknown	Unknown	Disposed
131	N/A	OCB	L	Unknown	N/A	U-221	72	1992	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
131	Substation U	OCB	L	Unknown	N/A	U-222	89	1992	Disposed
131	Substation U	OCB	L	Unknown	N/A	U-223	27	1998	Disposed
131	Substation U	OCB	L	Unknown	N/A	U-224	87	1992	Disposed
131	Substation U	OCB	L	Unknown	N/A	U-225	91	1992	Disposed
131	Substation U	OCB	L	Unknown	N/A	U-226	58	1992	Disposed
131	Substation U	OCB	L	Unknown	N/A	U-228	22	1998	Disposed
132	Substation U-1	O Sw	L	Unknown	N/A	U-229	Unknown	Unknown	Unknown
135	Station G	Xfmr	L	1,415	5,000	G-4	<1	N/A	Out of service
135	Substation G	OCB	L	Unknown	N/A	G-5	35	Unknown	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-6	64	Unknown	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-7	35	Unknown	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-840/G-846	777	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-841	164	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-842	104	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-843	144	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-844	195	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-845	173	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-847	155	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-848	141	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-849	160	1992	Disposed
135	Substation G	OCB	L	Unknown	N/A	G-850	104	1992	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
140	Substation B	Xfmr	L	Unknown	150	14	Unknown	Unknown	Disposed
140	Substation B	OCB	Unknown	Unknown	N/A	B-1	26	1998	Disposed
140	Substation B	Contactor	L	Unknown	N/A	B-2	61	Unknown	Disposed
140	Substation B	OCB	Unknown	Unknown	N/A	B-3	35	1998	Disposed
140	Substation B	Contactor	L	Unknown	N/A	B-4	61	Unknown	Disposed
140	Substation B	Contactor	L	Unknown	N/A	B-5	37	1998	Disposed
140	Substation B	OCB	Unknown	Unknown	N/A	B-6	84	1998	Disposed
140	Substation B	Contactor	L	Unknown	N/A	B-7	174	Unknown	Disposed
140	Substation B	OCB	L	Unknown	N/A	B-8	<1	N/A	Abandoned
140	Substation B	OCB	L	Unknown	N/A	B-9	60	Unknown	Disposed
140	Substation B	OCB	L	Unknown	N/A	B-10	Unknown	N/A	Out of service
140	Substation B	OCB	L	Unknown	N/A	B-20	101	Unknown	Disposed
140	Substation B	OCB	L	Unknown	N/A	B-22	57	1992	Disposed
140	Substation B	Xfmr	L	Unknown	100	B-202	14	1998	Disposed
140	Substation B	Xfmr	L	Unknown	1000	B-203	<1	N/A	Abandoned
159	Substation W	Xfmr	L	4,800	750	V-103	<1	N/A	Out of service
159	Substation W	Xfmr	L	4,800	750	V-104	<1	N/A	Out of service
203	Substation H	Xfmr	L	Unknown	1500	18	Unknown	Unknown	Disposed
203	Substation H	Xfmr	L	1,800	5000	H-3	6	N/A	Scheduled to be disposed.
203	Substation H	Xfmr	L	58	N/A	H-101	<1	N/A	Out of service

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
203	Substation H	Xfmr	L	58	N/A	H-102	<1	N/A	Out of service
203	Substation H	Xfmr	L	58	N/A	H-103	<1	N/A	Out of service
203	Substation H	O Sw	L	Unknown	N/A	H-105	<1	Unknown	Unknown
203	Substation H	OCB	L	Unknown	N/A	H-201	71	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-202	755	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-203	373	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-204	740	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-205	881	1993	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-206	54	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-207	77	1993	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-208	23	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-209	605	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-220	<1	N/A	Abandoned
203	Substation H	OCB	L	Unknown	N/A	H-221	119	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-222	<1	N/A	Out of service
203	Substation H	OCB	L	Unknown	N/A	H-223	58	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-224	133	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-225	123	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-226	154	1992	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-227	33	N/A	Active

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
203	Substation H	OCB	L	Unknown	N/A	H-228	17	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-229	15	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-230	2	N/A	Abandoned
203	Substation H	Xfmr	L	11	25	H-231	357	1993	Disposed
203	Substation H	OCB	L	Unknown	N/A	H-232	19	N/A	Active
203	Substation H	OCB	L	Unknown	N/A	H-233	123	Unknown	Disposed
205	Substation C	OCB	L	Unknown	N/A	G-101	663	Unknown	Disposed
205	N/A	Xfmr	L	Unknown	1,000	15	Unknown	Unknown	Disposed
206	Substation A	Xfmr	L	Unknown	333	13	Unknown	Unknown	Disposed
206	Substation A	Xfmr	L	615	1,200	A-101	94	Unknown	Disposed
206	Substation A	Xfmr	L	800	1,200	A-102	106	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-104	2,220	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-105	93	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-106	2	Unknown	Unknown
206	Substation A	OCB	L	Unknown	N/A	A-107	109	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-108	788	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-109	59	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-110	55	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-111	50	Unknown	Disposed
206	Substation A	OCB	L	Unknown	N/A	A-112	31	1998	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
206	Substation A	OCB	L	Unknown	N/A	A-113	190	Unknown	Disposed
206	Substation A	Xfmr	L	160	250	A-200	145	1992	Disposed
206	Substation A	Xfmr	L	95	100	A-201	17	1995	Disposed
206	Substation A	Xfmr	L	95	100	A-202	16	1995	Disposed
206	Substation A	Xfmr	L	95	Unknown	A-203	47	1992	Disposed
206	Substation A	Xfmr	L	95	1,000	A-204	64	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-1	663	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-2	797	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-3	1,340	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-4	1,348	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-5	1,736	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-6	1,923	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-7	652	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-8	1,377	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-9	2,116	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-10	2,347	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-11	2,350	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-12	818	1992	Disposed
207	Substation C	Contactor	L	Unknown	N/A	P-13	Unknown	1992	Disposed
211	Substation E-1	O Sw	L	Unknown	N/A	E-131	<1	N/A	Abandoned

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
211	Substation E-1	Xfmr	L	282	500	E-132	148	1993	Disposed
211	Substation E-1	Xfmr	L	290	1,000	E-133	Unknown	Unknown	Disposed
211	Substation E-1	Xfmr	L	175	200	E-134	37	1998	Disposed
214	Substation GH-4	OCB	L	Unknown	N/A	GH-104	19	1998	Disposed
217	N/A	Xfmr	L	85	200	GH-138	719,180	1995	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-157/E-343	36	1998	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-158/E-344	49	1992	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-159/E-345	<1	N/A	Out of service
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-160/E-342	6	1998	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-161/E-340	28	1998	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-162/E-339	2	N/A	Out of service
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-163/E-338	25	1998	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-164/E-332	57	1992	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-165/E-335	78	1993	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-166/E-336	36	1998	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-331	31	1998	Disposed
219	Substations E-2 and E-3	OCB	L	Unknown	N/A	E-333	12	1998	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-334	49	1992	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-337	82	1992	Disposed
219	Substation E	OCB	L	Unknown	N/A	E-346	142	Unknown	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
219	Substation E	OCB	L	Unknown	N/A	E-348	1,589	1992	Disposed
219	Substation E	Xfmr	L	Unknown	5	None	10	1998	Disposed
229	Substation L	Xfmr	L	Unknown	1,500	1	Unknown	Unknown	Disposed
229	Substation L	Xfmr	L	Unknown	2,500	2	Unknown	Unknown	Disposed
229	Substation L	OCB	L	Unknown	N/A	L-101	182	1993	Disposed
229	Substation L	OCB	L	Unknown	N/A	L-104	358	1993	Disposed
229	Substation L	OCB	L	Unknown	N/A	L-105	142	1993	Disposed
229	N/A	OCB	L	Unknown	N/A	L-102	7	1998	Disposed
229/523	N/A	OCB	L	Unknown	N/A	L-103	3	N/A	Out of service
229/523	N/A	Xfmr	L	100	100	L-107	<1	N/A	Out of service
229/523	N/A	Xfmr	L	100	100	L-108	<1	N/A	Out of service
229/523	N/A	Xfmr	L	100	100	L-109	4	N/A	Out of service
231	Substation D	Xfmr	L	Unknown	1,000	16	Unknown	Unknown	Disposed
231	Substation D	Xfmr	L	Unknown	500	17	Unknown	Unknown	Disposed
231	Substation D	OCB	L	Unknown	N/A	D-661	167	1992	Disposed
231	Substation D	OCB	L	Unknown	N/A	D-662	79	1993	Disposed
231	Substation D	OCB	L	Unknown	N/A	D-663	92	1993	Disposed
231	Substation D	OCB	L	Unknown	N/A	D-664	89	1993	Disposed
234	Substation M	Xfmr	L	282	500	M-101	125	1992	Disposed
234	Substation M	Xfmr	L	282	500	M-102	203	1992	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
234	Substation M	Xfmr	L	282	500	M-103	164	1992	Disposed
234	Substation M	Xfmr	L	282	500	M-104	208	1992	Disposed
234	Substation M	Xfmr	L	58	100	M-105	13	1998	Disposed
234	Substation M	Xfmr	L	58	100	M-106	2	N/A	Out of service
234	Substation M	Xfmr	L	58	100	M-107	3	N/A	Out of service
234	Substation M	OCB	L	Unknown	N/A	M-441	43	1998	Disposed
234	Substation M	OCB	L	Unknown	N/A	M-442	5	1998	Disposed
234	Substation M	OCB	L	Unknown	N/A	M-443	126	1993	Disposed
234	Substation M	OCB	L	Unknown	N/A	M-444	71	1993	Disposed
234	Substation M	O Sw	L	Unknown	N/A	M-446	Unknown	Unknown	Disposed
234	Substation M	O Sw	L	Unknown	N/A	M-447	Unknown	Unknown	Disposed
234	Substation M	O Sw	L	Unknown	N/A	M-448	Unknown	Unknown	Disposed
234	Substation M	O Sw	L	Unknown	N/A	M-449	Unknown	Unknown	Disposed
234	Substation M	O Sw	L	Unknown	N/A	M-445	Unknown	N/A	Out of service
258	Substation GH-1	Xfmr	L	Unknown	1000	19	Unknown	Unknown	Disposed
258	Substation GH-1	OCB	L	Unknown	N/A	GH-888	103	1993	Disposed
273	Substation GH-2	Xfmr	L	Unknown	100	20	Unknown	Unknown	Disposed
273	Substation GH-2	Xfmr	L	Unknown	100	21	Unknown	Unknown	Disposed
273	Substation GH-2	Xfmr	L	Unknown	100	22	Unknown	Unknown	Disposed
273	Substation GH-2	O Sw	L	Unknown	N/A	GH-887	<1	N/A	Abandoned

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
280	Substation GH-3	O Sw	L	Unknown	N/A	GH-131	<1	N/A	Abandoned
280	Substation GH-3	Xfmr	L	100	100	GH-133	3	N/A	Abandoned
280	Substation GH-3	Xfmr	L	300	500	GH-135	23	1998	Disposed
281	Substation Q	Xfmr	L	445	2,500	H-1	655,372	1993	Disposed
282	N/A	Xfmr	L	Unknown	100	H-2	Unknown	Unknown	Disposed
300	Substation N	O Sw	L	Unknown	N/A	H-101A	<1	N/A	Out of service
300	Substation N	Xfmr	L	116	112.5	H-102A	4	N/A	Out of service
300	Substation N	OFC	L	Unknown	N/A	H-103A	<1	N/A	Out of service
300	Substation N	O Sw	L	Unknown	N/A	H-104	<1	N/A	Out of service
300	Substation N	O Sw	L	Unknown	N/A	H-106	<1	N/A	Out of service
300	Substation N	O Sw	L	Unknown	N/A	H-108	<1	N/A	Out of service
300	Substation N	OCB	L	Unknown	N/A	H-701	3	N/A	Out of service
300	Substation N	OCB	L	Unknown	N/A	H-702	35	N/A	Active
300	Substation N	OCB	L	Unknown	N/A	H-703	<1	N/A	Out of service
300	Substation N	OCB	L	Unknown	N/A	H-704	2	N/A	Out of service
300	Substation N	OCB	L	Unknown	N/A	H-705	25	N/A	Active
300	Substation N	OCB	L	Unknown	N/A	H-706	15	N/A	Active
300	Substation N&O	Xfmr	L	156	333	H-707	8	N/A	Scheduled to be disposed.
300	Substation N	Xfmr	L	156	333	H-708	15	N/A	Scheduled to be disposed.

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
300	Substation N	Xfmr	L	156	333	H-709	9	N/A	Scheduled to be disposed.
306	Substation 1	Xfmr	L	1,406	5,000	I-1	48	N/A	Scheduled to be disposed.
306	Substation I	OCB	L	Unknown	N/A	I-105	53	Unknown	Disposed
306	Substation 1	OCB	L	Unknown	N/A	I-106	10	N/A	Active
306	Substation 1	OCB	L	Unknown	N/A	I-107	<1	N/A	Out of service
306	Substation I	OCB	L	Unknown	N/A	I-108	57	Unknown	Disposed
306	Substation 1	OCB	L	Unknown	N/A	I-109	20	N/A	Active
306	Substation I	OCB	L	Unknown	N/A	I-110	183	1993	Disposed
306	Substation I	OCB	L	Unknown	N/A	I-113	57	Unknown	Disposed
307	N/A	Xfmr	L	Unknown	112.5	None	<1	N/A	Out of service
311	Substation O-1	O Sw	L	Unknown	N/A	O-1	<1	Unknown	Unknown
311	Substation O	Xfmr	L	282	500	O-101	114	Unknown	Disposed
311	Substation O	Xfmr	L	282	500	O-102	75	Unknown	Disposed
311	Substation O	Xfmr	L	592	1000	O-103	25	Unknown	Disposed
311	Substation O	Xfmr	L	58	100	O-104	6	Unknown	Disposed
311	Substation O	Xfmr	L	58	100	O-105	4	N/A	Out of service
311	Substation O	Xfmr	L	58	100	O-106	4	N/A	Out of service
311	Substation O	OCB	L	Unknown	N/A	O-107	10	N/A	Active
311	Substation O	OCB	L	Unknown	N/A	O-108	243	1993	Disposed
311	Substation O	OCB	L	Unknown	N/A	O-109	173	1993	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
311	Substation O	OCB	L	Unknown	N/A	O-110	169	1993	Disposed
311	Substation O	O Sw	L	Unknown	N/A	O-2	<1	Unknown	Unknown
324	N/A	Xfmr	L	Unknown	100	None	<1	N/A	Abandoned
351	Substation I-7	Xfmr	L	Unknown	750	23	Unknown	Unknown	Disposed
351A	Substation I-7	Xfmr	L	132	200	I-114	4	N/A	Abandoned
368	Substation O-I	Xfmr	L	Unknown	300	31	Unknown	Unknown	Disposed
368	Substation O-I	Xfmr	L	Unknown	25	32	Unknown	Unknown	Disposed
368	Substation O-I	Xfmr	L	Unknown	25	33	Unknown	Unknown	Disposed
368	Substation O-I	Xfmr	L	Unknown	25	34	Unknown	Unknown	Disposed
400	Substation I-2	Xfmr	L	75	100	I-122	2	N/A	Abandoned
402	Substation I-1	Xfmr	L	67	100	I-115	3	N/A	Abandoned
402	Substation I-1	Xfmr	L	235	300	I-116	244	1992	Disposed
411	Substation Y	Xfmr	L	Unknown	750	8	Unknown	Unknown	Disposed
411	Substation Y	Xfmr	L	Unknown	750	9	Unknown	Unknown	Disposed
411	Substation Y	OCB	L	Unknown	N/A	Y-101	19	1998	Disposed
411	Substation Y	OCB	L	Unknown	N/A	Y-102	8	1998	Disposed
411	Substation Y	OCB	L	Unknown	N/A	Y-103	9	1998	Disposed
411	Substation Y	OCB	L	Unknown	N/A	Y-104	10	1998	Disposed
411	N/A	Capacitor	L	Unknown	N/A	Unknown	Unknown	1998	Disposed
413	Substation I-6	O Sw	L	Unknown	N/A	FY-1	<1	N/A	Abandoned
413	Substation I-6	O Sw	L	Unknown	N/A	FY-3	<1	N/A	Abandoned

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
413	Substation I-6	Xfmr	L	207	300	I-121	318	1993	Disposed
439	N/A	Xfmr	L	Unknown	1,500	30	Unknown	Unknown	Disposed
523	N/A	OCB	L	Unknown	N/A	H1-35	<1	Unknown	Disposed
523	N/A	OCB	L	Unknown	N/A	I-138	5	1995	Disposed
523	N/A	OCB	L	Unknown	N/A	I-139	62	Unknown	Disposed
523	N/A	OCB	L	Unknown	N/A	I-140	20	Unknown	Disposed
523	N/A	sw recl	L	Unknown	N/A	I-141	12	1998	Disposed
523	N/A	OCB	L	Unknown	N/A	I-142	9	1995	Disposed
526	N/A	Xfmr	L	80	100	555	<1	N/A	Out of service
526	N/A	Xfmr	L	80	100	555	<1	N/A	Out of service
527	Pole 2	Xfmr	L	Unknown	500	10	Unknown	Unknown	Disposed
527	Pole 2	Xfmr	L	Unknown	500	11	Unknown	Unknown	Disposed
527	Pole 2	Xfmr	L	Unknown	500	12	Unknown	Unknown	Disposed
600	Substation FY	O Sw	L	Unknown	N/A	FY-4	<1	N/A	Abandoned
600	Substation FY	OFC	L	Unknown	N/A	FY-5	<1	N/A	Abandoned
600	Substation FY	OFC	L	Unknown	N/A	FY-6	<1	N/A	Abandoned
600	Substation FY	OFC	L	Unknown	N/A	FY-8	<1	N/A	Abandoned
600	Substation FY	Xfmr	L	183	500	FY-9	<1	N/A	Abandoned
702	Substation I-5	Xfmr	L	Unknown	15	37	Unknown	Unknown	Disposed
702	Substation I-5	Xfmr	L	Unknown	15	38	Unknown	Unknown	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
702	Substation I-5	Xfmr	L	Unknown	15	39	Unknown	Unknown	Disposed
702	Substation I-5	Xfmr	L	32	37.5	I-133	88	Unknown	Disposed
702	Substation I-5	Xfmr	L	32	37.5	I-134	91	Unknown	Disposed
702	Substation I-5	Xfmr	L	40	37.5	I-135	41	Unknown	Disposed
810	Substation I-3	Xfmr	L	242	300	I-136	6	N/A	Scheduled to be disposed.
813	Substation I-8	Xfmr	L	Unknown	750	24	Unknown	Unknown	Disposed
813	Substation I-8	OCB	L	Unknown	N/A	I-117	<1	Unknown	Unknown
813	Substation I-8	OFC	L	Unknown	N/A	I-118	1,393	1992	Disposed
813	Substation I-8	OFC	L	Unknown	N/A	I-119	2,725	1992	Disposed
813	Substation I-8	OFC	L	Unknown	N/A	I-120	117	1993	Disposed
819	Substation I-4	Xfmr	L	Unknown	112.5	25	Unknown	Unknown	Disposed
821	Substation F	Reg	L	1,087	500	F-1	16	1993	Disposed
821	Substation F	tap chng	L	147	N/A	F-1a	112	Unknown	Disposed
821	Substation F	Xfmr	L	57	150	F-2	4	Unknown	Disposed
821	Substation F	Xfmr	L	Unknown	10	F-3	6	1998	Disposed
821	Substation F	CC Xfmr	L	65	Unknown	F-991	4	N/A	Abandoned
821	Substation F	Xfmr	L	Unknown	Unknown	F-992	4	N/A	Abandoned
821	Substation F	Xfmr	L	65	Unknown	F-993	2	N/A	Abandoned
821	Substation F	Xfmr	L	Unknown	Unknown	F-994	4	N/A	Abandoned
830	N/A	Xfmr	L	Unknown	500	36	Unknown	Unknown	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-157	7	Unknown	Unknown
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-156	237	N/A	Out of service
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-155	15	N/A	Out of service
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-154	51	N/A	Out of service
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-153	99	N/A	Out of service
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-152	5	Unknown	Unknown
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-151	77	N/A	Out of service
Dry Dock 4	Substation N-1	Xfmr	L	Unknown	2,500	26	Unknown	Unknown	Disposed
Dry Dock 4	Substation N-2	Xfmr	L	Unknown	2,500	27	Unknown	Unknown	Disposed
Dry Dock 4	Substation N-3	Xfmr	L	Unknown	2,500	28	Unknown	Unknown	Disposed
Dry Dock 4	Substation N-4	Xfmr	L	Unknown	2,500	29	Unknown	Unknown	Disposed
Dry Dock 6	Unknown	sw recl	L	Unknown	N/A	V-302	<1	Unknown	Unknown
N/A	Pole 48	Xfmr	L	Unknown	25	P-48-1	2	Unknown	Unknown
N/A	Pole 48	Xfmr	L	Unknown	25	P-48-2	4	Unknown	Unknown
N/A	Pole 48	Xfmr	L	Unknown	25	P-48-3	<1	Unknown	Unknown
N/A	Pole 51	Xfmr	L	Unknown	37.5	P-51-1	5	Unknown	Unknown
N/A	Pole 51	Xfmr	L	33	37.5	P-51-2	Unknown	Unknown	Disposed
N/A	Pole 51	Xfmr	L	Unknown	37.5	P-51-3	<1	Unknown	Unknown
N/A	Pole 55	CC Xfmr	L	52	N/A	P-55-A	4	N/A	Out of service

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
N/A	Pole 55	O Sw	L	Unknown	N/A	P-55-B	Unknown	1992	Disposed
N/A	Pole 59	Xfmr	L	40	25	P-59	3	N/A	Out of service
N/A	Pole 60	Xfmr	L	30	25	P-60	8	N/A	Scheduled to be disposed.
N/A	Pole 63	Xfmr	L	39	50	P-63-1	<1	N/A	Out of service
N/A	Pole 63	Xfmr	L	39	50	P-63-2	10	N/A	Scheduled to be disposed.
N/A	Pole 63	Xfmr	L	39	50	P-63-3	7	N/A	Scheduled to be disposed.
N/A	Pole 540	Xfmr	L	36	75	P-110A	<1	N/A	Out of service
N/A	Pole 540	Xfmr	L	36	75	P-110B	<1	N/A	Out of service
N/A	Pole 540	Xfmr	L	36	75	P-110C	<1	N/A	Out of service
N/A	Pole 400	Xfmr	L	40	37.5	P-400	<1	N/A	Out of service
N/A	Pole 508	CC Xfmr	L	65	2000	P-508A	7	1998	Disposed
N/A	Pole 508	Xfmr	L	Unknown	Unknown	P-508B	<1	N/A	Out of service
N/A	Pole 522	Xfmr	L	40	50	P-522	279	1992	Disposed
N/A	Pole 527	Xfmr	L	27	37.5	P-527	<1	N/A	Out of service
N/A	Pole 547	Xfmr	L	9	10	P-547-1	<1	N/A	Out of service
N/A	Pole 547	Xfmr	L	10	10	P-547-2	<1	N/A	Out of service
N/A	Pole 547	Xfmr	L	9	10	P-547-3	<1	N/A	Out of service
N/A	Pole 550	Xfmr	L	10	15	P-550	15	1998	Disposed
N/A	Pole 701-1	Xfmr	L	16	15	P-701-1	Unknown	Unknown	Unknown

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
N/A	Pole 701-2	Xfmr	L	16	15	P-701-2	Unknown	Unknown	Unknown
N/A	Pole 707	Xfmr	L	Unknown	75	P-707-1	8	Unknown	Unknown
N/A	Pole 707	Xfmr	L	Unknown	75	P-707-2	22	Unknown	Unknown
N/A	Pole 707	Xfmr	L	Unknown	75	P-707-3	65	1992	Disposed
N/A	Pole 804	Xfmr	L	Unknown	30	P-804	97	Unknown	Disposed
N/A	Pole 822	Xfmr	L	Unknown	37.5	P-822-1	66	1992	Disposed
N/A	Pole 822	Xfmr	L	Unknown	37.5	P-822-2	70	1992	Disposed
N/A	Pole 822	Xfmr	L	Unknown	37.5	P-822-3	11	Unknown	Disposed
N/A	Pole 918	Xfmr	L	32	15	P-918-1	13	1995	Disposed
N/A	Pole 918	Xfmr	L	32	15	P-918-2	17	1995	Disposed
N/A	Pole 918	Xfmr	L	32	15	P-918-3	15	1995	Disposed
N/A	Pole 929	Xfmr	L	32	37.5	P-929	6	1995	Disposed
N/A	Pole 938	Xfmr	L	Unknown	37.5	P-938	<1	N/A	Out of service
N/A	Pole 113b/109	Xfmr	L	33	25	V-6	195	1992	Disposed
N/A	Pole 113b/109	Xfmr	L	33	25	V-7	198	1992	Disposed
N/A	Pole 113b/109	Xfmr	L	33	25	V-8	57	1992	Disposed
N/A	Substation VF/Pole 921	Xfmr	L	32	37.5	VF-97	13	1998	Disposed
N/A	Substation VF/Pole 921	Xfmr	L	32	37.5	VF-98	9	1998	Disposed
N/A	Substation VF/Pole 921	Xfmr	L	32	37.5	VF-99	12	1998	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
N/A	Pole 529	Xfmr	L	Unknown	25	None	Unknown	N/A	Out of service
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-151	77	N/A	Scheduled to be disposed.
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-153	99	N/A	Scheduled to be disposed.
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-154	51	N/A	Scheduled to be disposed.
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-155	15	N/A	Active
Dry Dock 4	Substation R	OCB	L	Unknown	N/A	R-156	237	N/A	Scheduled to be disposed.
Pier 1	N/A	Xfmr	L	Unknown	Unknown	B-20	Unknown	1992	Disposed
Regunning Pier	Substation ST3	Xfmr	L	275	225	HI-3	<1	N/A	Out of service
Regunning Pier	Substation H-1	Xfmr	L	Unknown	750	HI-2	<1	Unknown	Unknown
Regunning Pier	Substation ST1	Xfmr	L	405	750	HI-1	<1	N/A	Out of service
WTC	Substation H-1	Xfmr	L	411	500	HI-34	10	1995	Disposed
WTC	Substation HI	Xfmr	L	19	25	556	163	Unknown	Disposed
WTC	Substation HI	Xfmr	L	19	25	557	288	Unknown	Disposed
WTC	Substation HI	Xfmr	L	19	25	558	281	Unknown	Disposed
15.3 (Gun Mole)	N/A	Xfmr	L	Unknown	750	Unknown	Unknown	Unknown	Disposed
16.2	N/A	Xfmr	L	Unknown	150	Gun Mole	Unknown	1992	Disposed
17.2	N/A	Xfmr	L	Unknown	750	Unknown	Unknown	Unknown	Disposed
19.2	N/A	Xfmr	L	Unknown	750	Gun Mole	Unknown	Unknown	Disposed

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building No.	Substation or Pole	Equipment Type	Type (S/L)	Gallons	KVA	Unit No.	PCB Content (ppm)	Date Removed	Status
20.2 (Gun Mole)	N/A	Xfmr	L	Unknown	750	Unknown	Unknown	Unknown	Disposed
21	Substation VF	Xfmr	L	Unknown	300	35	Unknown	Unknown	Disposed
25.2 (Pier 1)	N/A	Xfmr	L	Unknown	750	Unknown	Unknown	Unknown	Disposed
30.2 (Pier 2)	N/A	Xfmr	L	1,700	750	Unknown	Unknown	Unknown	Disposed
32.1 (Pier 2)	N/A	Xfmr	L	Unknown	Unknown	Unknown	Unknown	Unknown	Disposed
Man Hole 331	N/A	O Sw	L	Unknown	N/A	MH-1	Unknown	Unknown	Disposed
Man Hole 332	N/A	O Sw	L	Unknown	N/A	NH-2	Unknown	Unknown	Disposed
Man Hole 348	N/A	sw recl	L	Unknown	N/A	MH-3	397	1992	Disposed

Notes:

CC	Constant current
KVA	Kilovolt ampere
L	Liquid
N/A	Not applicable
ppm	Parts per million
O Sw	Oil switch
OCB	Oil circuit breaker
OFC	Oil fused cutoff
PCB	Polychlorinated biphenyl
S	Solid
sw recl	Switch reclosure
WTC	Wench Test Center
Xfmr	Transformer

a This table may differ from subparcel reports in Volume II. Information in this table is more current than information in the subparcel reports.

Reference:

TABLE 5-4A (Continued)

EXISTING AND FORMER HIGH VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

PWC. 1996.
SSPORTS. 1998.
Update by Navy 1998 SSPORTS Removals.

TABLE 5-4B

EXISTING LOW VOLTAGE ELECTRICAL EQUIPMENT[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Location	Equipment Type	Type (S/L)	Gallons	Unit Number	PCB Content	Status
Building 123 (Room 106)	Unknown	Unknown	Unknown	Unknown	Nondetect	Disposed
Building 530	Inerteen Conditioning Outfit Filter	Unknown	3 gpm	S/N 3590544/ S.O.84R405	32,000 ppm	Disposed
Building 813	Two 220 Volt CD Switches	L	Unknown	SN CR2960SY105	Non-detect	Disposed

Notes:

CD	Current Discharge
gpm	Gallons per minute
L	Liquid
PCB	Polychlorinated biphenyl
ppm	Parts per million
S	Solid

a Low voltage electrical equipment consists of electrical equipment with a voltage capacity of equal to or less than 750 volts. Only identified secondary electrical PCB, PCB-contaminated, and non-PCB suspect items are listed.

Reference:

PWC. 1996.

TABLE 5-5

UNDERGROUND STORAGE TANK INVENTORY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	UST Site	Tank	Building No.	Year[a]	Capacity (gallons)	Tank Material	Contents	Status[b]	Future Actions[c] and Comments
A	1	S-812	813	1976	13,000	Steel	Fuel oil	Removed in Phase I	None. No holes or corrosion pits in tank. No discoloration or odors in soil samples. Minor VOCs and SVOCs detected during removal operations. No contamination reported during resampling. No future action required.
B	2	S-135	116	NA	1,250	Steel	Fuel oil	Removed in Phase II	
B	3	S-136	118	NA	750	Steel	Fuel oil	Removed in Phase II	
C	4	S-203	203	NA	500	Steel	Gasoline	Removed in Phase I	
C	5	S-209	203	NA	210,000	Concrete	Fuel oil	Closed in place in Phase I	
C	5	S-210	203	NA	14,000	Steel	Brine	Closed in place in Phase I	
C	6	S-211	203	NA	3,000	Steel	Fuel oil	Removed in Phase II	
C	6	S-212	203	NA	4,500	Steel	Fuel oil	Removed in Phase II	
C	6	S-213	203	1943	35,000	Concrete	Water condensate	Removed in Phase II	
C	7	HPA-06	205	NA	24,000	Concrete	Water	Closed in place in Phase II	
C	8	S-214	205	1940	21,924	Steel	Fuel oil	Closed in place in Phase I	
C	9	HPA-01	211	NA	122	Steel	Diesel	Removed in Phase II	None. No holes or corrosion pits in tank. No discoloration or odors in soil samples. Minor concentrations of SVOCs detected; possible laboratory contaminants. No future action required.
C	10	HPA-10	231	NA	6,500	Steel	Fuel oil	Removed in Phase II	Yes
C	11	HPA-11	231	NA	1,600	Steel	Diesel	Removed in Phase II	Yes

TABLE 5-5 (Continued)

UNDERGROUND STORAGE TANK INVENTORY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	UST Site	Tank	Building No.	Year[a]	Capacity (gallons)	Tank Material	Contents	Status[b]	Future Actions[c] and Comments
C	12	HPA-12	231	NA	750	Steel	Diesel	Closed in place in Phase II	Yes
C	13	HPA-16	231	NA	7,200	Concrete	Water	Closed in place in Phase II	Yes
C	14	HPA-17	231	NA	1,700	Steel	Diesel	Removed in Phase II	Yes
C	15	S-219	251	NA	1,000	Steel	Gasoline and diesel	Removed in Phase II	None. No holes or corrosion pits in tank. No discoloration or odors in soil samples. Minor concentrations of VOCs detected; possible laboratory contaminants. No future action required.
C	16	S-251	251	NA	1,000	Steel	Solvent	Removed in Phase I	Yes
C	17	HPA-02	253	NA	1,500	Steel	Solvent	Removed in Phase II	Yes
C	17	HPA-03	253	NA	1,500	Steel	Waste solvent	Removed in Phase II	Yes
C	18	HPA-04	253	NA	1,000	Steel	Gasoline and diesel	Removed in Phase II	Yes
C	18	HPA-05	253	NA	1,000	Steel	Gasoline and diesel	Removed in Phase II	Yes
C	19	S-001	253	1976	3,000	Steel	Gasoline	Removed in Phase I	Yes
C	19	S-002	253	1976	3,000	Steel	Gasoline	Removed in Phase I	Yes
C	19	S-003	253	1976	3,000	Steel	Diesel	Removed in Phase I	Yes
C	19	S-004	253	1976	3,000	Steel	Gasoline	Removed in Phase I	Yes
C	20	S-215	271	NA	25,320	Steel	Paint thinner	Closed in place in Phase I	Yes
C	21	HPA-07	272	NA	500	Steel	Waste oil	Removed	Yes

TABLE 5-5 (Continued)

UNDERGROUND STORAGE TANK INVENTORY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	UST Site	Tank	Building No.	Year[a]	Capacity (gallons)	Tank Material	Contents	Status[b]	Future Actions[c] and Comments
C	22	HPA-33	281	NA	3,000	Steel	Gasoline, diesel, and solvents	Removed in Phase II	Yes
C	22	HPA-34	281	NA	750	Steel	Gasoline, diesel, and solvents	Removed in Phase II	Yes
C	23	S-304	304	1943	7,000	Steel	Gasoline	Removed in Phase I	Yes
C	23	S-305	304	1943	7,000	Steel	Gasoline	Removed in Phase I	Yes
C	24	HPA-308	308	NA	500	Steel	Gasoline	Closed in place in Phase II	None. No discoloration or odors in soil samples. Minor concentrations of VOCs and SVOCs detected; possible laboratory contaminants. No future action required.
C	25	S-435 (1)	435	NA	750	Steel	Solvents	Removed in Phase I	Yes
C	25	S-435 (2)	435	NA	750	Steel	Solvents	Removed in Phase I	Yes
C	26	S-508	500	mid-1940s	750	Steel	Fuel oil	Removed in Phase I	Yes
C	27	S-711	709	NA	5,000	Steel	Gasoline	Removed in Phase I	Yes
C	27	S-712	709	NA	5,000	Steel	Gasoline	Removed in Phase I	Yes
C	27	S-713	709	NA	5,000	Steel	Diesel	Removed in Phase I	Yes
D	27	S-714	709	NA	5,000	Steel	Diesel	Removed in Phase I	Yes
D	27	S-715	709	NA	500	Steel	Oil	Removed in Phase I	Yes
D	27	HPA-14	709	NA	30	Steel	Hydraulic fluid	Removed in Phase II	Yes
D	None	2 Tanks	439	NA	13,000 (combined)	Concrete	Acid and alkaline waste	Investigated under IR-67 IRP	Yes

TABLE 5-5 (Continued)

UNDERGROUND STORAGE TANK INVENTORY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	UST Site	Tank	Building No.	Year[a]	Capacity (gallons)	Tank Material	Contents	Status[b]	Future Actions[c] and Comments
E	27	HPA-15	709	NA	30	Steel	Hydraulic fluid	Removed in Phase II	Yes
E	28	S-801	811	NA	10,000	Steel	Gasoline	Closed in place in Phase I	Yes
E	28	S-802	811	NA	10,000	Steel	Gasoline	Closed in place in Phase I	Yes
None	FUDS	4 Tanks	815	Mid-1940s	3,000	Unknown	Unknown	Assumed to be removed	No
None	FUDS	1 Tank	820	NA	5,000	Unknown	Fuel oil	Under investigation	Yes

Notes:

FUDS Formerly used defense sites
IRP Installation Restoration Program
NA Not available
SVOC Semivolatile organic compound
UST Underground storage tank
VOC Volatile organic compound

a Year UST was installed.
b Phase I – All USTs were removed or closed in place in Phase I by November 1991;
Phase II – All USTs were removed or closed in place in Phase II by October 1993.
c "Yes" denotes that further investigation of extent of soil and groundwater contamination from USTs is warranted and is being investigated as part of the Installation Restoration Program with adjoining installation restoration or site inspection sites.
The location of USTs are shown on Figure 5-1.

Reference:

PRC. 1996b.
PRC. 1997b.

TABLE 5-6

ABOVEGROUND STORAGE TANK INVENTORY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Tank Location	Number of Tanks	Capacity (gallons)	Past Contents	Status
A	Building 110	1	1,000	Propane	In use
A	Water Tank	1	106,000	Water	Not in use
B	Building 115	1	100	Unknown	To be evaluated
B	Building 120	1	250	Propane	In use
B	Building 124(d)	5	(2) 7,500	Sulfuric acid	Removed
			(2) 5,000	Electrolytes	
			(1) 5,000	Distilled water	
B	Building 146	2	Unknown	Petroleum hydrocarbon	Removed
B	IR-06, Tank Farm	1	12,000	Lubrication oil	Removed
B	IR-06, Tank Farm	2	(2) 12,000	Stoddard solvent	Removed
B	IR-06, Tank Farm	8	3,000	Lubrication oil	Removed
B	IR-06, Tank Farm	7	(1) 210,000	Diesel fuel	Removed
			(6) 12,012		
C	Building 203	9	(1) 1,600	Unknown	Not in use, but still contains petroleum product[b]
			(2) 1,200	(1) Unknown; (1) acid	(1) Not in use, but still contains liquid[b]; (1) not in use[b,d]
			(1) 3,200	Unknown	Not in use[b]
			(1) 50	Unknown	Not in use[b,c,d]
			(1) 1,000	Acid and corrosive material	Not in use[b,d]
			(2) 100	Unknown	Not in use[b,d]

TABLE 5-6 (Continued)

ABOVEGROUND STORAGE TANK INVENTORY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Tank Location	Number of Tanks	Capacity (gallons)	Past Contents	Status
C	Building 203 (Continued)	1	Unknown	Unknown	Not in use[b,d]
		Tank Cluster	Various	Possibly R-22 refrigerant	Refrigerant will be disposed. Not in use[b,d]
C	Building 205	1	500	Unknown	To be evaluated
C	Building 211	5	(4) 750	Silicone	(4) Removed
			(1) 3,000	Soap and spent soap	Not in use[b,d]
C	Building 231	2	Unknown	Phosphate hydrazine	Removed
C	Building 236	1	250	Diesel fuel	Removed
C	Building 241	2	1,600	Oil	Removed
C	Building 251	1	900	Possibly solvent	Removed
C	Building 258[e]	9	(2) 75	Fuel oil or gasoline	One removed, others not observed
			(2) 100	Fuel oil or gasoline	
			(1) 1,000	Distilled water	
			(4) Unknown	Unknown	
C	Building 270	4	(2) 100 to 200	Waste oil	Removed
			Unknown	Unknown	Removed
C	Building 273	8	(2) Unknown	Possibly solvents	Removed
			(6) Unknown	Possibly solvents	Removed
C	Building 275	1	Unknown	Unknown	Removed
C	Building 281	1	Unknown	Boiler tank	Unknown

TABLE 5-6 (Continued)

ABOVEGROUND STORAGE TANK INVENTORY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Tank Location	Number of Tanks	Capacity (gallons)	Past Contents	Status
D	Building 302	7	(2) 1,600	Solvents (degreaser and rinsate)	Not in use, but still contains liquid[b,g]
			(1) 95	Solvents (rinsate)	Not in use[b,g]
			(1) 140	Water	Not in use[g]
			(2) Unknown	Unknown	Removed
			(1) 675	Solvent	Not in use, but contains an oily liquid[b]
D	Building 304	2	Unknown	Unknown	Removed
D	Building 324	2	Less than 55	Unknown	Not in use
D	Building 363	1	Unknown	Possibly water reservoir	Unknown
D	Buildings 375(d) and 380	2	5,000	Fuel oil	Not in use
D	Buildings 378 and 379	3	(1) 10,000	Fuel oil	Removed
			(1) Unknown	Compressed air	
			(1) Unknown	Water	
D	Building 384	1	1,000	Possibly fuel oil	Not in use
D	Building 411	1	150	Possibly diesel	In use
D	Building 500	1	Unknown	Unknown	Removed
D	Building 503(d)	1	21,000	Fuel oil	Removed (Building 606 currently on site)
D	Crane Storage Yard (IR-71)	Unknown	Unknown	Unknown	Not in use
E	Buildings 371 and 704	2	Unknown	Diesel fuel	Not in use

TABLE 5-6 (Continued)

ABOVEGROUND STORAGE TANK INVENTORY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Tank Location	Number of Tanks	Capacity (gallons)	Past Contents	Status
E	Building 405	1	220	Water	Not in use[b]; scheduled to be removed by SSPORTS
E	Building 423(d)	2	(1) 15,000	Phosphoric acid	Unknown
			(1) 5,000	Sulfuric acid	
E	Building 521 (Power Plant)	9	(3) 1,700	NaOH	Not in use[b,f]
			(1) 50,000	Hot Resin	Not in use, but still contains liquid (20 percent full)[b,f]
			(1) 850	Unknown	Not in use, but contains scrap metal (no liquid)[b,f]
			(2) 300	Unknown	(1) Not in use[b,f] (1) Not in use.[c] Owned by Triple A Machine Shop
			(1) 100	Unknown	Not in use[b,f]
			(1) 55	Unknown	Unknown, but tank contains black tar-like substance[b]
			(1) Unknown	Unknown	Removed[f]
E	Building 809	5	(2) 50,000	Sand	Not in use[b,c]
			(1) 4,200	Air tank	Owned by Golden Gate Railroad Museum; currently empty[c]
			(1) 5,200	Diesel	
			(1) 850	Diesel	
E	Building 810	6	(1) 4,000	Asphalt	Not observed
			(3) 2,500	Diesel	

TABLE 5-6 (Continued)

ABOVEGROUND STORAGE TANK INVENTORY[a]
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Tank Location	Number of Tanks	Capacity (gallons)	Past Contents	Status
E	Building 810 (Continued)	6	(2) Unknown	Water	Not observed
E	S-505	1	630,000	Fuel and waste oil	Removed
E	South Pier	1	825	Unknown	Not in use, but still contains about 400 gallons of petroleum product[b]; scheduled to be removed by SSPORTS

Notes:

(d) Demolished

SSPORTS Supervisor of Shipbuilding, Conversion, and Repair, Portsmouth, VA, Environmental Detachment, Vallejo

a This table may differ from subparcel reports in Volume II. Information in this table is more current than information in the subparcel reports. Table does not include open dip/process tanks, any tank above the first floor, or sandblast baghouses.

b Aboveground storage tank (AST) is scheduled to be emptied (if not already) of its contents and cleaned out (steel tanks will be dismantled and the metal scrapped). IT Corporation (IT) is tasked by the Navy to clean the tanks and haul away any stored materials in the ASTs. The Navy will dismount and remove some of the steel ASTs and supporting structures sometime in the near future.

c No further action required.

d Unknown if tank is empty.

e Eleven concrete and metal dip tanks associated with drainage sump were identified in Building 258. The tanks are currently not in use.

f Asbestos-containing material has been removed from the AST.

g AST is considered both an AST and an underground storage tank. The aboveground portion of the tank will be removed. The below ground portion of the tank will be closed in place.

References:

IT. 1997b.

IT. 1998b.

PRC Environmental Management, Inc. 1997b.

Update from Navy. April 1998.

TABLE 5-7

INSTALLATION RESTORATION SITES
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Installation Restoration Sites[a]
A	SI-19, SI-41, SI-43, (SI-45), (SI-50), IR-59JAI, and SI-77
B	IR-06, IR-07, IR-10, IR-18, IR-20, IR-23, IR-24, IR-26, SI-31, IR-42, (SI-45), IR-46 (Fuel Lines), IR-60, IR-61, and IR-62
C	IR-25, IR-27, IR-28, IR-29, IR-30, IR-49 (Fuel Lines), IR-57, IR-58, IR-63, and IR-64
D	IR-08, IR-09, IR-16, IR-17, IR-22, IR-32, IR-33, IR-34, IR-35, IR-37, IR-38, IR-39, IR-44, IR-48, IR-53, IR-55, IR-65, IR-66, IR-67, IR-68, IR-69, IR-70, and IR-71
E	IR-01/21, IR-02, IR-03, IR-04, IR-05, IR-11, IR-12, IR-13, IR-14, IR-15, IR-36, IR-38, IR-39, IR-40, IR-47, IR-52, IR-54, IR-56, IR-72, and IR-73
F	IR-78
Basewide	IR-45 – Steam Line System; IR-50 – Storm Drain System/Sanitary Sewer System; and IR-51 – Transformer Sites
Other (FUDS)	IR-74, IR-75, and IR-76

Notes:

FUDS Formerly used defense sites
JAI Jerrold Avenue Investigation

a Base Realignment and Closure Cleanup Team accepted Installation Restoration Program designations.

TABLE 5-8

TITLE DOCUMENT REVIEW SUMMARY
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

SF Block Number	Business Name	Address	Comments	Location
4591A	Union Ironworks Dry Dock Company (Bethlehem Shipbuilding Corporation)	Evans Avenue or Hunters Point Boulevard	2 USTs (fuel oil and water)	HPS
4617	South San Francisco Dock Company	Hunters Point Boulevard	Owned numerous blocks	HPS
4634	Houghton Company	Coleman or Galvez Avenues	Unknown business activity	HPS
4646	Anderson and Christofani Boat Building	892 Innes Avenue	Paint and machine shops notes	Adjacent
4726	San Francisco Mountain Springs Water Company	930 Oakdale Avenue	Well with electrical pump noted	HPS
4735	Atlas Heating and Ventilation	912 Palou Avenue	None	HPS/FUDS
4735	Imperial Glue Company	900 Palou Avenue	Owned by Legallet Wool Company; fuel oil UST noted	HPS/FUDS
4755	A.B. Cooper Refinery	1096 Quesada Avenue	Oil reclaiming plant; 7 ASTs notes	Adjacent
4763	Dan P. Mayer Paint Company	1140 Revere Avenue	Paint manufacturing facility	Adjacent
4764	Legallet Tanning Company	1099 Quesada Avenue	Tannery; steel refuse burner noted	Adjacent
4785	Norton Wool Company	1099 Revere Avenue	None	Adjacent
4792	Unknown	1248 Thomas Avenue	Drum reconditioning and spray painting	Adjacent
4793	Unknown	1127 Shafter Avenue	Contractor storage	Adjacent

Notes:

AST Aboveground storage tank
FUDS Formerly used defense site
HPS Hunters Point Shipyard
SF San Francisco
UST Underground storage tank

Sources:

See Appendix D

CHAPTER 6

FINDINGS AT ADJACENT PROPERTY

Areas and sites adjacent to HPS with the potential to release hazardous substances into the environment were identified using visual drive-by inspections, reviews of agency files, and review of aerial photographs. This chapter describes the general setting and land use in the vicinity of HPS (Section 6.1), summarizes the review of aerial photographs for off-site areas (Section 6.2), and briefly summarizes the results of the records search with regard to five sites adjacent to HPS that may have a potential for impacting HPS (Section 6.3).

6.1 LAND USE IN THE VICINITY OF HUNTERS POINT SHIPYARD

Land use in the vicinity of HPS includes residential, commercial, and industrial. San Francisco Housing Authority Hunters Point A-West, E-West, Hunters View, and Westbrook are located in the area around HPS. This project is a large area of low-income housing. Part of the housing project is immediately adjacent to the HPS entrance gate. Other surrounding areas are a mixture of light and heavy industry. Industries include automobile recycling and repair shops, food manufacturers, and a variety of other industrial endeavors. A few retail ventures, such as stores and eating establishments, are also within 1 mile of HPS. The remainder of HPS is surrounded by San Francisco Bay.

A drive-by visual inspection revealed that the industrial and housing areas are in varying states of repair. The residential area has a minimal potential environmental impact on HPS, based on normally anticipated residential activities. The railroad tracks that extend from HPS are used as a disposal area. There is a high probability that releases of hazardous substances and petroleum products have occurred at the railroad tracks.

6.2 AERIAL PHOTOGRAPH REVIEW

Aerial photographs dated 1935, 1946, 1969, 1985, and 1994 were evaluated in a summary report (HLA 1995a). The summary report and the aerial photographs cited in the report are included in Appendix C of this report. The report evaluates the aerial photographs based on a grid system. The report identifies areas with potential environmental contamination as "potential AOCs." The plates contained in the HLA report show the grid system, land use, and potential AOCs for 1935, 1946, 1969, 1985, and 1994. Plate 2 presents the area map, with the grid imposed on HPS and the vicinity. Plates 3 through 7 show the land

use and potential AOCs for 1935 through 1994. This chapter summarizes information from the aerial photograph review regarding the off-site areas.

The aerial photographs in Appendix C show the extension of the HPS peninsula and the increased development and industrialization of the HPS area. The 1935 photograph shows a much smaller land mass with a small industrialized area, mainly along the shoreline northwest of HPS, northwest of Parcels B and E. Portions of the area that is currently filled northwest of Parcel B, and most of what is now Parcels D and E, did not exist in 1935.

The land area significantly increased by 1946. The 1946 photograph also showed increased industrialization and housing. Off-site industrial areas were again observed near Parcels B and E.

The general land extent and land use varied slightly between 1946 and 1969. The area immediately northwest of Parcel B, which contains potential AOCs, was filled during this period. The 1969 AOCs were located immediately northwest of Parcel E and in newly filled open space northwest of Parcel B.

Land use remained fairly consistent between 1969 and 1994. Industrial areas encroached on former open space during this time. The 1969, 1985, and 1994 aerial photographs show areas of environmental concern in the off-site area northwest of Parcels B and E. The exact locations or configurations changed, but the general vicinity of potential AOCs remained the same.

HLA's report used identifiable items such as tanks and stained soil to classify potential AOCs. Tanks and stained soil have been observed off site adjacent to Parcel E since 1935. The 1985 and 1994 photographs show debris, a scrap yard, and in 1994 a possible automobile recycling yard. Off-site areas northwest of Parcel B were not evaluated in detail for the 1935 and 1946 aerial photographs. Debris, debris with fill, and fill were observed in the 1969 through 1994 photographs. A potential AOC, identified as a circular fill area, was observed in the 1984 and 1994 photographs northwest of Parcel B along the shoreline.

Table 6-1 lists the grid quadrants containing potential AOCs for each aerial photograph in Appendix C of this report. As the table shows, the AOCs evolved with time. Most notable was the increase in the number of sites considered as potential AOCs between 1946 and 1969. This increase reflects the increased industrialization in the HPS vicinity during this period. The potential AOCs varied little between 1985 and 1994, which may reflect a stabilization of the industrial uses in these areas.

6.3 RECORDS SEARCH FINDINGS

The EPA Region IX GIS Toxic and leaking USTs (LUST) Site List database was searched for sites within 1 mile of HPS that might have released hazardous substances into the environment. Twenty-seven industrial sites of concern were generated from this list. The EPA GIS-generated list and additional lists developed for prior reports are included as Appendix E of this report.

Five of the 27 sites on the EPA GIS list were considered to have a potential for affecting the environment at HPS. Files of the Local Oversight Program at the Hazardous Materials Division of the City of San Francisco (SF-LOP), Department of Public Health, Bureau of Environmental Health Management were reviewed for these five sites. The information derived from the record searches for the five sites is summarized in the following paragraphs. The properties on Griffith, Underwood, and Thomas Avenues are northwest of Parcel E. The sites on Innes and Evans Avenues are northwest of Parcel B.

Arnold & Egan Manufacturing Co., Inc., 1515 Griffith Street. An RWQCB Unauthorized Release Form was filed for this site in May 1988. One 1,000-gallon gasoline tank was removed at the corner of Griffith and Shafter Avenues, approximately 300 feet from the Parcel E boundary. Minimal soil contamination was detected in soil samples collected during the removal: 18 milligrams per kilogram (mg/kg) TPH as gasoline (TPH-g) and 33 mg/kg TPH as diesel (TPH-d). No further action was taken. The file report states that the contamination was assumed to have resulted from disintegration of the tar wrapping around the steel tank. The IRP investigation for IR-01/21 (TtEMI 1997b) determined that the groundwater was contaminated. Releases from the UST may be the source of benzene, PCBs, and petroleum hydrocarbons detected in groundwater in the southwest corner of IR-01/21. Further investigation is required.

Bay Area Drum, 1212 Thomas Avenue. This site is a California "Superfund" or remediation site. Information was obtained during a telephone interview (December 18, 1995) with Mr. Bill Brown of the Cal/EPA, DTSC, Region II in Berkeley, California (HEE 1995h). The site is a former drum recycling facility. It was closed in 1987, and DTSC performed an expedited removal action. The removal action included removal of soil from a vacant lot and from the yards of bordering residences. Clean fill was brought in and the excavated areas were filled and graded. The removal action also included removing drums from the facility yard and locking the process building. The yard was then capped with chip seal. No additional removal or remediation actions have been taken at the site since 1988; however, soil and groundwater investigations are ongoing. Soil and groundwater are contaminated with organic

compounds, inorganic compounds, and PCBs. The investigative data are reported in RI reports prepared before and after the removal action. A draft risk assessment was prepared, but not finalized. The responsible party group for this facility is currently preparing its own risk assessment.

CBS Earthmoving and Demolition Company, 1055 Underwood Avenue (Corner of Underwood and Griffith). This facility is listed in the SF-LOP files as a closed automobile wrecking facility, M&M Wrecking Yard. CBS Earthmoving and Demolition Company performed a tank removal at this site. The UST was removed along Underwood Avenue, approximately 200 feet east of the Parcel E boundary. The site was subsequently owned and operated by the California Department of Parks and Recreation, with the address of 1801 Griffith Street. The Department of Parks and Recreation installed a new 1,000-gallon gasoline tank and dispensing station in February 1986. More recent information was unavailable in the SF-LOP files.

The IRP investigation for IR-01/21 determined that the groundwater was contaminated. Releases from the removed UST may have been a potential source of contamination to groundwater in IR-01/21, as determined during IRP investigations at the site. Releases from the UST may be sources of benzene, PCBs, and petroleum hydrocarbons in groundwater in the southwest corner of IR-01/21. Further investigation is required (TtEMI 1997b).

Donco Industries, 894 Innes Avenue. Information for this property was obtained from an inspection report prepared by the City of San Francisco hazardous materials inspector, dated June 16, 1993, and available maps. A 1945 Sanborn insurance map shows a paint shop, machine shop, and rails for boat maintenance at this location. Since 1993, Donco Industries has owned the land occupied by Pacific Ship and Boat Repair. Piles of sandblast waste, some containing hazardous levels of copper and lead, were present on city property adjacent to this site. It was unclear whether the current tenant or the prior occupant disposed of materials containing hazardous levels of metals at the site. Currently, remedial actions for this site are being discussed between the City of San Francisco and the EPA.

Proposed PG&E Hunters Point Plant, 100 Evans Avenue. This site is owned by the Ferrari Brothers. The SF-LOP files include information regarding removal of two small USTs. An oil-water separator was closed and removed in September 1989. Approximately 800 yd^3 of soil containing petroleum hydrocarbons as oil was removed and disposed of by February 1990. The UST was replaced with an AST in April 1990. Groundwater monitoring data from August 1990 and June 1991 indicated the presence of TPH-d between 83 and 4,400 ppb, benzene at less than 2 ppb, and low levels of ethylbenzene, toluene,

and total xylenes. A 110-gallon diesel UST was removed in July 1991. Following sampling, soil was washed, removed, retested, and the excavation backfilled. In 1994, PG&E performed further sampling at the site. PAHs were detected in the soil (Bechtel 1994). This site was not chosen due to community opposition to the proposed power plant.

6.4 CONCLUSIONS REGARDING ADJACENT PROPERTIES

The available data indicate that most adjacent sites probably have not had an environmental effect on the soil or groundwater at HPS. In most cases, the adjacent sites are too distant, or there is no recorded history of releases of materials. The possible exceptions are facilities located adjacent to Parcel E, and those listed in the previous paragraphs. No data were available that would have allowed a comparison of the types of contaminants found along the border of Parcel E with those found on adjacent sites. The information and conclusions presented in this chapter are based on limited information and may change as additional data are developed.

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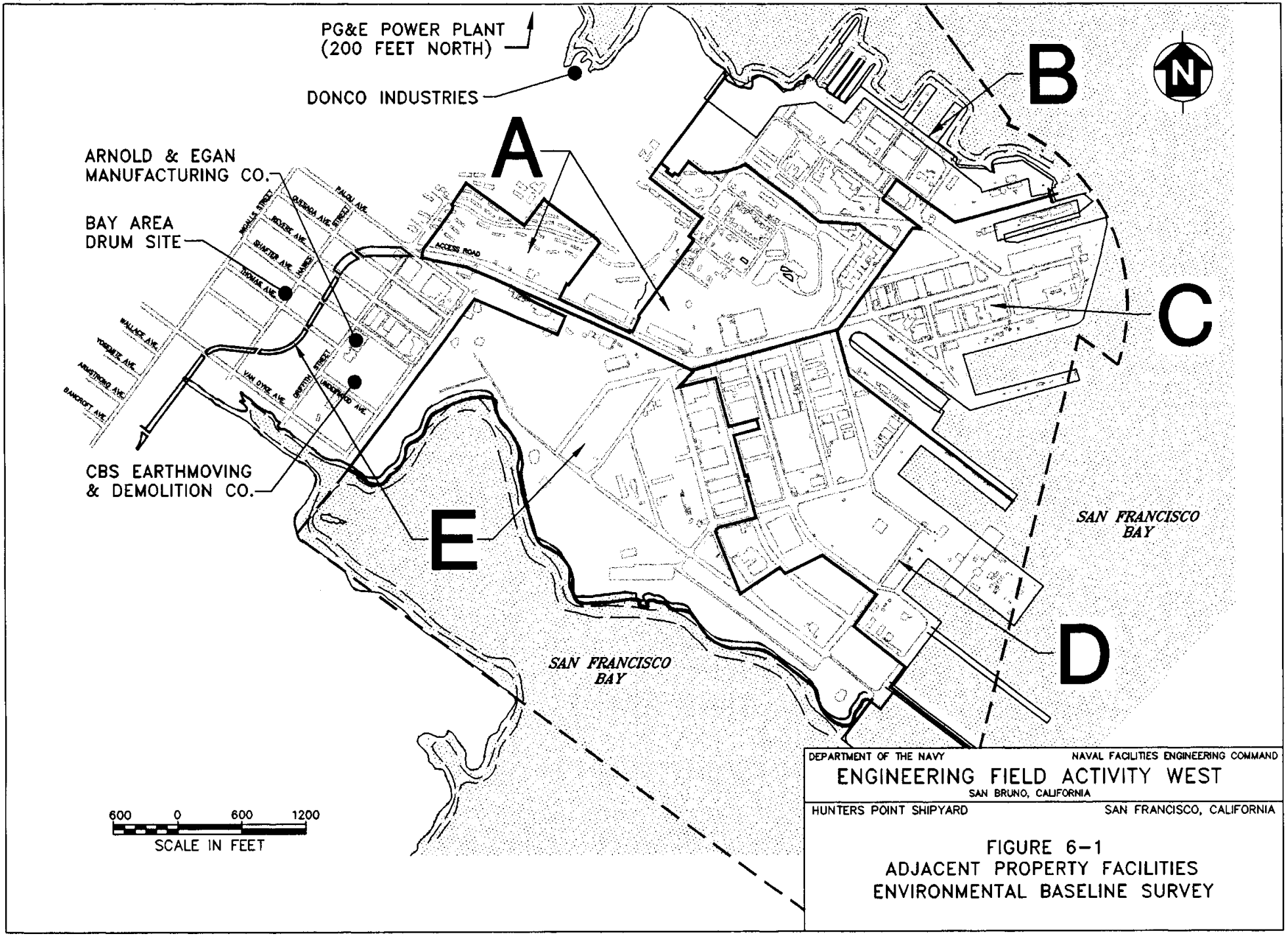


DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 6-1
ADJACENT PROPERTY FACILITIES
ENVIRONMENTAL BASELINE SURVEY

TABLE 6-1

AERIAL PHOTOGRAPH GRID QUADRANTS CONTAINING OFF-SITE AOCs
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Aerial Photograph Date	Quadrant from Aerial Report Plates[a]
1935	B3a and C2d
1946	A3a and B3a
1969	A3, A3c, A3d, B1b, C1ab, and D1ad
1985	A3a, A3b, A3c, A3d, A4a, B1b, B3a, and C1ab
1994	A3a, A3b, A3c, A3d, A4a, B1b, B2a, C1b, and C1c

Notes:

AOC Area of concern

a HLA. 1995a.

CHAPTER 7

CONCLUSIONS FOR FACILITY PROPERTY

This chapter presents conclusions developed from the data presented in this basewide EBS. Section 7.1 summarizes the ECP category classifications. Table 7-1 presents the property classification at each HPS subparcel, and the rationale used in classifying each subparcel. Section 7.2 describes the subparcels that are in whole or in part CERFA-clean, changes in the CERCLA and DoD regulation regarding the ECP categories, and suitability of subparcels to be transferred.

7.1 PROPERTY CLASSIFICATIONS

HPS properties include buildings and immediately adjacent land, structures, docks, dry docks, and open land areas. Table 7-1 lists the property classification and the rationale for each classification. Information from the BCP (PRC 1997b), the 1995 VSIs, IRP reports, and from personnel responsible for current investigative work were used to determine the subparcel ECP category classification for each subparcel. Figure 7-1 shows the ECP classification categories at HPS. Asbestos, LBP, and radon issues were not factors considered in property classification.

The subparcel boundaries are those determined by the SFRA for long-range land-use planning. They were established independently from the IRP parcels. Some subparcels could have included more than one ECP category property classification reflecting the varying status of areas and buildings within a given subparcel. The ECP category classifications are numbered 1 through 7. In cases where there are two or more classification categories in a subparcel, the highest ECP category is used as the overall property for the subparcel. The data are current as of preparation of the draft version of this document. The environmental status for each subparcel and each IR or SI site is summarized in Chapter 5 and Appendix G of this report. Complete database tables for each subparcel are included in Volume II of this basewide EBS.

The seven ECP categories are defined in the following paragraphs. Table 7-1 lists the ECP category for each subparcel.

Category 1 – Areas Where No Release or Disposal (Including Migration) Has Occurred. This area type is defined as follows: a geographically contiguous and mappable area where the results of investigations show that no hazardous substances or petroleum products were released into the environment, or disposed of on site property. A determination of this area type cannot be made, however, unless a minimum level of information gathering and assessment has been completed. In accordance with Section 120(h)(4) of CERCLA as amended by CERFA, all such determinations (i.e., "uncontaminated") of this area type must be made on the basis of a records search of the area in question and adjacent property; a review of the chain of title documents for the area, a review of aerial photographs of the area, a visual inspection of the area and adjacent property, and interviews with current and former employees regarding their knowledge of past and current activities on the property. These efforts are (or can be) functionally accomplished via an EBS (or properly scoped PA) of the property in question. If information gathered from these efforts indicates that hazardous substances or petroleum products have been released or disposed of in the area, the geographic location becomes one of the other area types.

Ten subparcels are classified as overall Category 1. Subparcels requiring no remediation due to release, disposal, or migration of hazardous substances or petroleum product are classified Category 1. These subparcels are mainly located in Parcel A and constitute open space, residential units, and business buildings.

Category 2 – Areas Where Only Release or Disposal of Petroleum Products Has Occurred. This area type is defined as follows: a geographically contiguous and mappable area where the results of investigations show only that release or disposal of petroleum products has occurred. A determination of this area type must be made in accordance with the same requirements in Section 120(h)(4) of CERCLA, as listed in the above paragraph.

No subparcel was classified Category 2.

Category 3 – Areas of Contamination Below Action Levels. This area type is defined as follows: a geographically contiguous and mappable area where environmental evidence demonstrates that hazardous substances have been released, but are present in quantities that require no response action to protect human health and the environment. Such quantities of hazardous substances can be below defensible detection limits, or can be above detection limits but below action levels. Below action levels means, in the absence of installation-specific risk-based or standards-based criteria, that the concentration of any hazardous substance in any medium does not exceed chemical-specific ARARs. Designation of this area type also means that risk estimates completed for contamination do not do the following:

- Exceed 10^{-6} for any carcinogenic hazardous substance detected in any medium
- Result in a HQ above 1 for any non-carcinogenic hazardous substance detected in any medium

- Exceed 10^{-6} for any carcinogenic hazardous substance, taken together, in any exposure pathway
- Result in an HI above 1 for all non-carcinogenic hazardous substances, taken together, in any exposure pathway
- Exceed 10^{-4} for any carcinogenic hazardous substance accumulated across all pathways
- Result in an HI above 1 for all non-carcinogenic hazardous substances accumulated across all pathways

Note that a designation of a Type 3 area cannot be made with confidence unless a minimum level of information gathering and assessment has been completed. As such, all such determinations should be made on the basis of an SI or equivalent level of effort, which includes biased field sampling and laboratory analysis to support a conceptual understanding of the area.

One subparcel in Parcel B was classified as overall Category 3. This subparcel requires no remedial actions because contaminants were not detected at concentrations that endanger human health or the environment. Some IR sites are classified Category 3, meeting the above-listed criteria.

Category 4 – Areas Where All Remedial Action Has Been Taken. This area type is defined as follows: a geographically contiguous and mappable area where all remedial actions necessary to protect human health and the environment have been taken. Type 4 areas include those areas in which an EBS documents evidence that hazardous substances are known to have been released on the property, but all remedial actions necessary to protect human health and the environmental with respect to any hazardous substances remaining on the property have already been taken to meet the provisions of CERCLA Section 120(h)(3). Classification on the meaning of "all remedial action has been taken" is found in Section 120(h)(4)(B)(i) of CERCLA. BCTs preparing suitability of property for transfer maps should be aware that "all remedial action has been taken" means that the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to EPA to be operating properly and successfully (in practice, usually a year).

Areas classified Category 4 may be called "formerly contaminated," since remediation is complete. Five subparcels are classified as overall Category 4. The remedial actions have been instituted in these areas for more than 1 year and contaminants remediated to acceptable levels protective of human health and the environment.

Category 5 – Areas of Known Contamination with Removal and/or Remedial Action Under Way. This area type is defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is confirmed based on the results of sampling and analysis in electronic databases and/or environmental restoration and compliance reports. By definition, this area type contains contaminant concentrations above action levels. Such concentrations do not meet the criteria that would allow a determination of a Type 3 area. Remedial systems for Type 5 areas are partially or entirely in place, but have not been fully demonstrated.

Six subparcels, all in Parcel B, are classified as overall Category 5. Several IR sites are also classified Category 5. Remediation actions in these areas have been determined and are currently underway. Subparcel-specific sites where some remediation actions have been taken but not all remediation actions have been determined may be tentatively classified Category 5. Examples of these IRP sites are IR-01/21, IR-02, and IR-03 in Subparcel S-OS.

Category 6 – Areas of Known Contamination Where Required Response Actions Have Not Yet Been Implemented. This area type is defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances is confirmed based on the results of sampling and analysis as contained in electronic databases and/or environmental restoration and compliance reports. This area type contains concentrations of contaminants above action levels. Such concentrations do not meet the criteria that would allow a determination of a Type 3 area. Additionally, required remedial systems have not been selected or implemented.

Thirty-eight subparcels are considered as overall Category 6. Parcel F is also considered Category 6, but is not part of a "real" subparcel. Subparcels were classified Category 6 if one of the following statements applied:

- The type or necessity for remedial action has not been determined, but remedial action will probably be required.
- Remedial actions are necessary, but not yet planned or designed.
- Remedial actions are planned, but not yet implemented.

There are Category 6 areas in Parcels B, C, D, E, and F.

Category 7 – Areas that are Unevaluated or that Require Further Evaluation. This area type is defined as follows: a geographically contiguous and mappable area where the presence of sources or releases of hazardous substances or petroleum products (including derivatives) is suspected, but not well characterized, based on the results of a properly scoped records search, chain of title review, aerial photography review, visual inspection, set of employee interviews, and possibly sampling and analysis. They do not, with certainty, fit any of the previous area types because evaluation efforts have not occurred, are ongoing, or are inconclusive.

More than four gigabytes of investigative data and several bookcases of environmental reports exist for HPS. To state than any portion of a subparcel is unevaluated would be inaccurate. Data exist for every subparcel at HPS, even if the existing data are not absolutely conclusive. Any subparcel for which data exist, even if the preference is to gather additional data before developing detailed remedial action plans, has been classified Category 6 property. There are no Category 7 properties at HPS.

7.2 COMMUNITY ENVIRONMENTAL RESPONSE FACILITATION ACT OF 1992: CLEAN PROPERTIES AND PROPERTIES POTENTIALLY SUITABLE FOR LEASE OR TRANSFER

This section describes the properties at HPS that may be classified as suitable for lease or sale. Properties classified in Categories 1 through 6 may be considered suitable for lease or transfer; however, only Category 1 properties are "CERFA-clean."

"CERFA-clean" properties are defined as those properties classified as ECP Category 1. Category 1 properties are uncontaminated. No release or disposal (including migration) of hazardous substances or petroleum products has occurred on these properties. The main areas at HPS meeting Category 1 criteria are open space and residential subparcels in Parcel A. Based on a review of readily available information and the IRP investigations, these areas show no releases or migration of hazardous substances or petroleum products. Since the publication of the 1995 EBS, two major revisions of the CERCLA and DoD legislation affect the suitability of federal property to transfer.

In 1996, with the passing and signing of the 1997 Appropriations Act, two major revisions of CERCLA and DoD legislation affecting the suitability of federal property to transfer went into effect. The first, Section 331 of the Act, amended Title 42 USC 9620(h)(4)(A), Section 120(h)(4)(A)(CERCLA). It clarified the meaning of uncontaminated property for purposes of transfer by the U.S. It is defined as follows:

> Amends Section 1209(h)(4)(A) of CERCLA by deleting the phrase "stored for 1 year or more."

The change affected Category 2 sites, making them petroleum-only contaminated areas. The word "storage" was also deleted from definitions of Categories 1 through 4. To date, the new HPS property categories have not received approval from the regulatory agencies.

The second revision of CERCLA and DoD legislation, Section 334 of the Act, amended Title 42 USC Section 9620(h)(3)(CERCLA). It authorized the transfer of contaminated federal property before completion of required remedial actions. It is defined as follows:

> Section 334, which amends Title USC 9620(h)(3)(CERCLA), enables federal property to be transferred if the property is suitable for the intended use, intended use is consistent with protection of health and environment, adequate notice has been given, the transfer will not substantially delay necessary response action, and response action assurances are given.

Previously, only properties classified Categories 1 through 4 were suitable for transfer by deed. As a result of the revisions to CERCLA and DoD legislation, new properties classified 1 through 6 are suitable for transfer by deed. Properties classified 5 and 6 are considered "early deed transfers." This classification means all categories (except 7) are transferable if conditions are met.

As a result, there is no longer a clear division between transferable and untransferable properties. Instead of a hierarchical approach (the lower the number, the cleaner the property), the approach becomes flat, and each category of property (except 7) will be assessed individually. Early deed transfer is a possibility at HPS; it would probably be accomplished by parcel supported by a FOST.

The following table summarizes, for each parcel, the number of subparcels that fall into each ECP category.

Parcel	ECP 1	ECP 2	ECP 3	ECP 4	ECP 5	ECP 6	ECP 7
A	12	0	0	4	0	0	0
B	1	0	1	0	7	8	0
C	1	0	0	0	0	14	0
D	0	0	0	1	0	12	0
E	0	0	0	1	0	14	0

Because a subparcel can span two parcels, the total number of subparcels represented in the table is greater that the actual total number of subparcels at HPS. Parcel F has no subparcels but is considered

Category 6. The FUDS, located in Parcel E, also have no subparcels and have been transferred to private owners. An ECP classification is not applicable to these sites.

Subparcels classified as Categories 1, 2, 3, 4, 5, or 6 are potentially suitable for lease or transfer. All subparcels at HPS are classified as Categories 1, 3, 4, 5, or 6 properties.

7.3 FACILITY MATRIX

The facility matrix, presented in Table 7-2, summarizes the EBS findings for each building at HPS. Buildings classified ECP Category 1, 2, 3, 4, 5, or 6 are suitable for lease or transfer. The findings presented in Table 7-2 are discussed in more detail in Chapter 5. The column headings for the facility matrix table are defined as follows:

Building Number: This number represents the building number on most HPS maps.

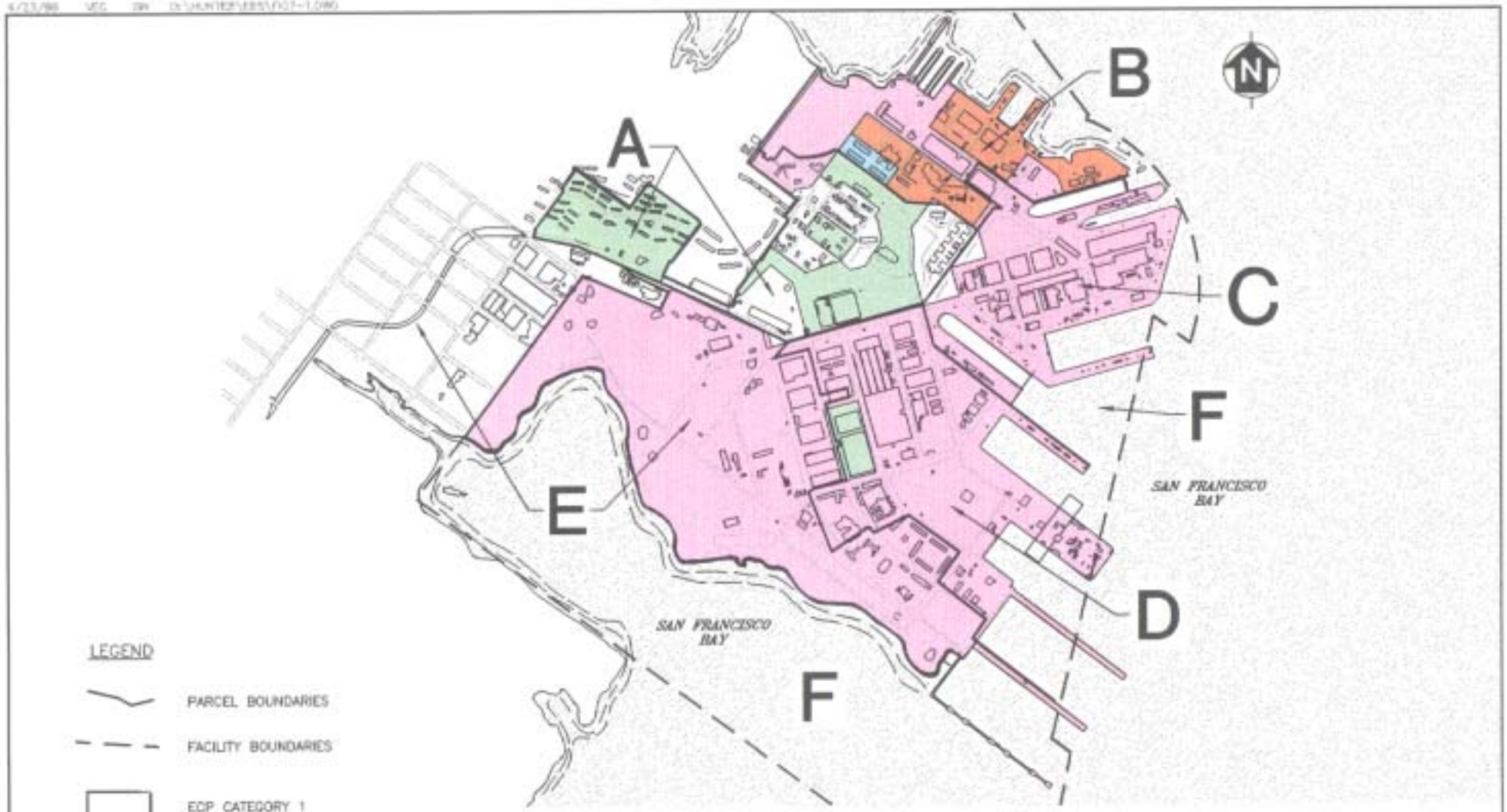
Past Use/Building Name: This name represents the common nomenclature, historical or current, that best describes the building.

IRP Site: The number for the IRP area where the building is located.

Hazardous Conditions: These are specific items of environmental concern observed during the 1995 VSI, evaluated during previous surveys, and evaluated during IRP investigations. An explanation for each letter column heading is provided below.

- A – Asbestos
- D – Radon
- I – Air monitoring
- L – LBP
- M – Hazardous material
- P – PCBs
- R – Radiological
- S – 1997 Tenant Survey
- T – Tanks: USTs and ASTs
- V – 1995 VSI

- W – Hazardous waste



NOTE: NO ECP CATEGORY 2 OR 7 SUBPARCELS EXIST.

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST

SAN BRUNO, CALIFORNIA

HUNTERS POINT SHIPYARD — SAN FRANCISCO, CALIFORNIA

FIGURE 7-1

ECP CATEGORY CLASSIFICATION MAP

ENVIRONMENTAL BASELINE SURVEY

TABLE 7-1

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
H-48	A	816, 817A, and 818/SI-41	None	None	4	Hazardous materials were stored at this subparcel. All remedial actions have been taken. This subparcel is available for transfer.
H-49	A	Residential units	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.
H-50	A	Residential units	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.
H-51	A	158, 322, and 915, residential units	None	A	1	This subparcel was partly residential, partly commercial business. This subparcel is available for transfer.
H-52	A	Residential units	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.
H-53	A	906(d), residential units, and water tank/IR-59JAI and SI-43	None	A	4	Hazardous materials were released to the environment. All remedial actions have been taken. Residential units are Category 1. This subparcel is available for transfer.
H-54	A	Residential units	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.
H-55	A	908 and residential units	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.
H-56	A	None	None	None	1	This subparcel is undeveloped and no release (including migration) or disposal of hazardous substances has occurred. This subparcel is available for transfer.
H-57	A	921	None	A	1	This subparcel was exclusively residential. This subparcel is available for transfer.

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
H-OS	A	102 and 901/SI-19	None	A	4	The subparcel is overall Category 4. Undeveloped areas and Building 102 are Category 1 because no release (including migration) or disposal of hazardous substances has occurred. The areas surrounding Building 901 are Category 4 because hazardous substances were stored and released at the site, but remedial actions are complete. This subparcel is available for transfer.
N-1	A and B	A: 19, 917(d), and 100 B: IR-18	None	None	Overall: 6 (A: 1) (B: 6)	The subparcel is overall Category 6. Most of the area is a paved parking lot. The subparcel area in Parcel A is Category 1 because no release (including migration) or disposal of hazardous substances has occurred. IR-18 in Parcel B is Category 6 because of an unknown, off-site metals (mainly lead) and PAH contaminant source that will be investigated during pre-remedial design activities for this IR site. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-2	B	IR-07 and IR-18	None	None	6	IR-07 and IR-18 are Category 6 because further investigations are required to fully characterize the sites. The extent of soil contamination at IR-07 is unknown as a result of off-site migration. IR-18 contains metals (mainly lead) and PAH contamination that has migrated from an unknown, off-site source. Remedial actions are upcoming. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
N-3	A and B	A: Dago Mary's (916) B: IR-07 and IR-18	None	None	Overall: 6 (A: 1) (B: 6)	The subparcel is overall Category 6. The subparcel area in Parcel A is Category 1 because no release (including migration) or disposal of hazardous substances has occurred. IR-18 in Parcel B is Category 6 because of an unknown, off-site metals (mainly lead) and PAH contaminant source. IR-07 in Parcel B is Category 6. The extent of soil contamination because of off-site migration is unknown at this IR site, and further investigation is required as part of the pre-remedial design activities. A waste oil disposal area has been identified in this subparcel. Granitic sand, which is naturally slightly radioactive, was also found in this subparcel. Remedial actions are upcoming. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-4	B	103, 104, and 117/IR-62	None	A	3	This subparcel contains IR-62. No remedial actions are required because contaminants were not detected above IR site-specific action levels. Buildings in this subparcel are Category 1. This subparcel is available for transfer.
N-5	B	115, 116, 118(d), and 119(d)/IR-23 and IR-62	S-135 and S-136	A	5	IR-23 is Category 5. This site is fully characterized, and removal actions have been completed. USTs were removed from this subparcel. IR-62 is Category 3. No remedial actions are required because contaminants were not detected above IR site-specific action levels. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
N-6	B	121, 122, and 146/IR-07, IR-23, and IR-61	None	A	6	IR-07 is Category 6 because the extent of soil contamination at IR-07 is unknown as a result of off-site migration. Category 5 sites, IR-23 and IR-61, are well-characterized and remedial actions are upcoming in Parcel B. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-7	B	113, 114 (113A), 114(d), and 120/IR-42 and SI-31	None	A	5	The IR/SI sites in this subparcel have been fully characterized. SI-31 is Category 4 and IR-42 is Category 5. Remedial actions are upcoming. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-8	B	123/IR-10	None	A	6	IR-10 is Category 6. IR-10 contains VOCs that could possibly degrade to vinyl chloride, which may pose a human health risk. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-9	B	125, 128, 131, and 159/ IR-24	None	A	5	IR-24 has been fully characterized and remedial actions are upcoming in Parcel B. Building 125 is Category 3 because contaminants were detected below IR site-specific action levels. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-10	B	109, 111(d), 112(d), and ASTs/IR-42 and IR-06 (Tank Farm)	None	A	5	IR-06 and IR-42 are Category 5 and have been fully characterized. This area includes a former tank farm in IR-06. Remedial actions are upcoming in Parcel B. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-11	B and C	B: 124(d)/IR-10 and IR-24 C: 134/IR-25	None	A	Overall: 6 (B: 6) (C: 6)	IR-24 is Category 5 and has been fully characterized. IR-10 and IR-25 are Category 6. IR-25 possibly contains DNAPLs, and further investigation during pre-remedial design activities will be conducted. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-12	B	130 and 156/IR-20 and IR-24	None	A	5	IR-20 is Category 5 because metal and TPH contamination at the site.

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
						IR-20 is being evaluated in the petroleum hydrocarbon CAP. IR-24 is Category 5 and has been fully characterized. Remedial actions are upcoming in Parcel B. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-13	B and C	B: None C: IR-58	None	None	Overall: 6 (B: 1) (C: 6)	The subparcel is overall Category 6. The small area of this subparcel within Parcel B is Category 1, and no evidence of release (including migration) or disposal of hazardous substances has occurred. IR-58 in Parcel C is Category 6. This site has been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-14	B and C	B: IR-26 C: 135 and 206/IR-58 and IR-64	None	A	Overall: 6 (B: 5) (C: 6)	The subparcel is overall Category 6. IR-26 in Parcel B is Category 5 and has been fully characterized. Remedial actions are upcoming in Parcel B. IR-58 and IR-64 in Parcel C are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-15	B	157 and 163/IR-20 and IR-26	None	A	6	IR-20 is Category 5 because metal and TPH contamination at the site. IR-20 is being evaluated in the petroleum hydrocarbon CAP. IR-26 is Category 6 because the extent and source of manganese contamination in Building 157 has not yet been determined. Remedial actions have not yet been implemented in these areas, and the areas may be reassessed upon further investigation. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-16	B	129, 132, 133, 140, 141, 142A(d), and Berths 55 through 58/IR-24 and IR-26	None	A	5	IR-24 and IR-26 are Category 5 and have been fully characterized. Remedial actions are upcoming in Parcel B. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-17	A	A: 101 and 110	None	None	Overall: 1	This subparcel contains no IR/SI sites, only office buildings.

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
	and C	C: None			(A: 1) (C: 1)	Hazardous materials were stored in Buildings 101 and 110, but were only used for commercial uses. No release (including migration) or disposal of hazardous substances has occurred. This subparcel is available for transfer.
N-18	C	154, 217, 241, 278(d), 279(d), and 280/IR-29, IR-30, and IR-63	None	A	6	IR-29, IR-30, and IR-63 are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-19	C	258/IR-28	S-219	A	6	IR-28 is Category 6. This site has been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-20	C	214, 251, and 252/IR-28	S-251	A	6	IR-28 is Category 6. This site has been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-21	C	204, 205, 207, and 208/ IR-27 and IR-64	HPA-06 and S-214	A	6	IR-27 and IR-64 are Category 6. These sites have been characterized, but a final remedy has not been selected. USTs were closed in place. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-22	C	231/IR-28	None	A	6	IR-28 is Category 6. This site has been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-23	C	203, 215, 275, 282, and S-211/IR-29	S-203, S-211, S-212, and S-213	A	6	IR-29 is Category 6. This site has been characterized, but a final remedy has not been selected. USTs were removed or closed in place. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-24	C	228, 270, 271, 272, 273, and 281/IR-28	HPA-07, HPA-33,	A	6	IR-28 is Category 6. This site has been characterized, but a final remedy has not been selected. USTs were removed or closed in place.

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
			HPA-34, and S-215			This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-25	C	211, 224, and 253/IR-28	HPA-02 through HPA-05 and S-001 through S-004	A	6	IR-28 is Category 6. This site has been characterized, but a final remedy has not been selected. USTs were removed or closed in place. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-26	C	230, 235(d), and 236/IR-28 and IR-29	S-209 and S-210	A	6	IR-28 and IR-29 are Category 6. These sites have been characterized, but a final remedy has not been selected. USTs were closed in place. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
N-OS	B and C	B: 144, 145, Berths 61 through 64, and Dry Docks 5, 6, and 7/ IR-07, IR-23, IR-24, and IR-60 C: 218, 219, 225, 226, 229, Berths 1 through 5 and YYK sheds/IR-28	HPA-01, HPA-10, HPA-11, HPA-12, HPA-16, and HPA-17	A	Overall: 6 (B: 6) (C: 6)	The subparcel is overall Category 6. Most of this subparcel is within IR-07 or IR-28. IR-23, IR-24, and IR-60 in Parcel B are Category 5. These sites have been fully characterized and removal actions have been completed in Parcel B. IR-07 in Parcel B is Category 6 because the extent of soil contamination in IR-07 from off-site migration is unknown and further investigation is required. IR-28 and the YYK sheds (nine buildings) are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-27	C and D	C: 234 (238), 300, 301, 367, Dry Dock 4, and Berths 6 through 11/ IR-57 D: 274, 306, 308, 311, 313(d), 313A(d), 368, 369, 370, 372, 374(d), 375(d), 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, Berths 12 through 21 and Regunning Pier/IR-22, IR-32, IR-35, IR-55, and IR-68	HPA-308	A	Overall: 6 (C: 6) (D: 6)	The overall subparcel is Category 6. This subparcel is a large and varied area that includes Dry Dock 4 and the Regunning Pier. IR-57 in Parcel C is Category 6. This site has been characterized, but a final remedy has not been selected. IR-22, IR-32, and IR-35 in Parcel D are Category 6 and have been fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-55 in Parcel D is Category 4, and no remedial action is required. IR-68 in Parcel D is Category 6 because an electrical transformer was observed between Building 378 and a nearby generator shed. The Navy will properly dispose of the transformer pending analytical results. Building 308 is Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-28	D	302, 303 (302A), 304, 363, and 366/IR-33 and IR-34	S-304 and S-305	A	6	IR-33 and IR-34 are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. USTs were removed or closed in place. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-29	D	402, 417, 418, 419, 420, 421, 422(d), 423(d), and 424/IR-09 and IR-33	None	A	6	IR-33 is Category 6 and is fully characterized. Remedial actions have not yet been implemented in Parcel D. This subparcel consists mainly of the pickling and plate yard (IR-09), where removal actions have occurred. IR-09 is Category 5. This subparcel is only available for transfer except by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-30	D and E	D: 401, 404, 435, 436, and 437/IR-37 and IR-66 E: 404A/IR-36	S-435(1) and S-435(2)	A	Overall: 6 (D: 6) (E: 6)	IR-36 and IR-37 are Category 6 and have been characterized. Remedial actions have not yet been implemented in Parcels D and E. IR-66 is Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-31	D and E	D: None E: 400 and 405/IR-36	None	A	Overall: 6 (D: 6) (E: 6)	IR-36 is Category 6 and has been characterized. Remedial actions have not yet been implemented in Parcels D and E. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-32	E	702(d) and 710/IR-05, IR-12, and IR-36	None	A	6	IR-05, IR-12, and IR-36 in Parcel E are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-33	E	IR-05 and IR-12	None	None	6	IR-05 and IR-12 are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is mainly open area. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-34	E	IR-01/21, IR-02, and IR-12	None	R	6	IR-01/21, IR-02, and IR-12 are Category 6. These sites have been characterized, but a final remedy has not been selected. Radium dials (radioactive) were detected in the material in IR-02. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-35	E	371, 524(d), 704, 707, 708, 709, and 803(d)/IR-02, IR-13, IR-36, and IR-39	HPA-14, HPA-15, and S-711 through S-715	A and R	6	IR-02, IR-13, IR-36, and IR-39 in Parcel E are Category 6. These sites have been characterized, but a final remedy has not been selected. Characterized radiation hazards exist at the Building 707 concrete drum storage pad (residual radiation). This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-36	E	406, 413, and 414/IR-36	None	A	6	IR-36 is Category 6 and has been characterized. Remedial actions have not yet been implemented in Parcel E. A possible DNAPL source may exist at Building 406. Further investigation is required. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-37	D and E	D: 407 and 439/IR-66 and IR-67 E: None	None	A	Overall: 4 (D: 4) (E: 4)	IR-66 and IR-67 are Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. The sites have been fully characterized. This subparcel is available for transfer.
S-38	D	408, 409, 410(d), 411, and 438/IR-33 and IR-44	None	A	6	IR-33 is Category 6 and is fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-44 is Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-39	D	323, 324, 351, 351A, 364, 365, 415, and 416/IR-33, IR-34, IR-65, and IR-71	None	A and R	6	IR-33, IR-34, and IR-65 are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-71 is Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. The radiation surveys required at Buildings 364 (sump site) and 351A have been completed. A removal of contaminated radioactive material will be required at Building 364 (sump site). This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-40	D and E	D: 500 and 505/IR-38 and IR-39 E: IR-13 and IR-14	S-508	A	Overall: 6 (D: 6) (E: 6)	The subparcel is overall Category 6. IR-38 and IR-39 in Parcel D are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-13 and IR-14 in Parcel E are Category 6. The site has been characterized, but a final remedy has not been selected. The UST was removed. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-41	D and E	D: 501(d), 502(d), 503(d), and 606/IR-08, IR-38, and IR-39 E: 506(d), 507(d), and 529(d)/IR-14, IR-38, and IR-39	None	R	Overall: 6 (D: 6) (E: 6)	The subparcel is overall Category 6. IR-08 in Parcel D is Category 5 because of a possible DNAPL source in groundwater that requires further monitoring. IR-38 and IR-39 in Parcel D are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. The portions of IR-38 and IR-39 in Parcel E are Category 6. Radiation surveys have been completed at the NRDL buildings. IR-14 is Category 6. These sites have been characterized, but a final remedy has not been selected. Building 606 is Category 4 because remedial actions are complete, and an interim lease has been signed for this area. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-42	D and E	D: 508(d)/IR-08, IR-38, and IR-48 E: 512(d) and 517(d)/ IR-38	None	R	Overall: 6 (D: 6) (E: 6)	The subparcel is overall Category 6. IR-08 in Parcel D is Category 6 because of a possible DNAPL source in groundwater that requires further investigation and/or monitoring. IR-38 and IR-48 in Parcel D are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-38 in Parcel E is Category 6. Radiation surveys have been completed at the NRDL buildings. The site has been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-43	D	307 and S-308/IR-32, IR-55, and IR-70	None	None	6	IR-55 is Category 6 and is fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-32 is Category 4 because contaminants were detected at levels above action levels, but based on the site-specific HHRA, remedial actions are not required. IR-70 is Category 5 because a removal action to excavate contaminated soil was completed in late 1996. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-44	E	509(d), 510(d), 510A(d), 511(d), 511A(d), 513(d), 514(d), 515(d), 516(d), 518(d), 520(d), 521, and AST S-505/IR-02, IR-11, IR-14, IR-15, IR-38, and IR-54	None	A and R	6	IR-14, IR-15, IR-38, and IR-54 are Category 6. These sites have been characterized, but a final remedy has not been selected. IR-02 and IR-11 are tentatively Category 5 because remedial actions have taken place at these sites. Radiation surveys have been completed at the NRDL buildings. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-45	E	807(d), 809, 810, and 811/IR-01/21, IR-04, IR-56, and IR-72	S-801 and S-802	A	6	IR-01/21, IR-04, IR-56, and IR-72 are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
S-46	A and E	A: 808 and 821 E: (IR-04 and IR-56)	None	None	Overall: 1 (A: 1) (E: 6)	The subparcel is overall Category 1. Hazardous substances were stored at Building 808, but no release (including migration) or disposal of hazardous substances has occurred. Only a small portion of IR-04 is in this subparcel. IR-56's boundary coincides with the subparcel boundary. IR-04 and IR-56 in Parcel E are Category 6. These sites have been characterized, but a final remedy has not been selected. This subparcel is available for transfer. However, the portion of the subparcel in Parcel E is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).
S-47	A	813, 819, and 823/SI-77	S-812	None	4	UST-812 was removed, and the associated remedial actions are complete. This subparcel is available for transfer.
S-OS	D and E	D: 523,525, 526, 530, and Berths 22through 29/ IR-16, IR-17, IR-53, and IR-69 E: 527, 600, and Berths 30 through 42/IR-01/21, IR-02, IR-03, IR-40, IR-52 (railroad right-of-way), and IR-73	None	A and R	Overall: 6 (D: 6) (E: 6)	The subparcel is overall Category 6. This subparcel is a very large area and includes landfills, former residences, former AST sites, a former asphalt plant, and industrial buildings. IR-17 in Parcel D is Category 4 because contaminants were detected above action levels, but based on the site-specific HHRA, remedial actions are not required. IR-53 and IR-69 in Parcel D are Category 6 and are fully characterized. Remedial actions have not yet been implemented in Parcel D. IR-01/21, IR-02, and IR-03 in Parcel E are tentatively Category 5 because some removal actions have taken place or are underway at the sites. IR-40, IR-52 (railroad right-of-way), and IR-73 are Category 6 and are in Parcel E. The sites are mostly characterized, but a final remedy has not been selected. Radium dials (radioactive) were detected in the fill material in IR-02. This subparcel is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

TABLE 7-1 (Continued)

ECP CATEGORY CLASSIFICATION RATIONALE
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Subparcel	Parcel	Buildings and/or IR/SI Sites	UST	Asbestos[a] or Radiation	ECP Category	Rationale[b,c]
None (Other)	None	FUDS: 815, 820, 830, and 831/IR-74, IR-75, and IR-76	None	R	N/A	These FUDS have been sold to private owners and are not part of the City of San Francisco's reuse plan. Further investigation of these sites may be necessary. These sites have been transferred.
None	F	None	None	None	6	The offshore area of the facility has been investigated, but the investigations are incomplete. Remedial actions may be required but have not been undertaken. This offshore area is only available for transfer by covenant deferral as found in CERCLA 120(h)(3)(C).

Notes:

AST	Aboveground storage tank	PAH	Polynuclear aromatic hydrocarbon
CAP	Corrective action plan	N/A	Not applicable
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	Navy	U.S. Department of the Navy
(d)	Demolished	NRDL	Naval Radiological Defense Laboratory
DNAPL	Dense nonaqueous-phase liquid	SI	Site inspection
ECP	Environmental condition of property	TPH	Total petroleum hydrocarbons
FUDS	Formerly used defense sites	UST	Underground storage tank
HHRA	Human health risk assessment	VOC	Volatile organic compound
IR	Installation restoration		

a Asbestos-containing material (ACM) used in the construction of buildings prior to 1976 may be present, but does not present a hazard under current conditions. The ACM issue should be addressed prior to renovation, demolition, or occupancy of any building. See Table 5-3 for buildings containing asbestos at Hunters Point Shipyard.

b IR-SI sites may be in one or more parcels or subparcels. The rationale for any one subparcel pertains to the areas of IR/SI sites contained within that subparcel only. ECP categories within subparcels may differ, but the most conservative category identified in the subparcel is assumed as the overall subparcel category.

c Subparcel S-46 is an exception. See S-46 ECP Category Rationale.

References:

DoD. 1996.

See Appendix G references

TABLE 7-2

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
19	N-1	Apartment Building	None										X		1
100	N-1	Main Electrical Substation for Navy Power	None					X	X				X	X	1
101	N-17	Administration Office	None	X				X	X		X		X		1
102	H-OS	Old Post Office	None	X									X		4
103	N-4	COMSUB Barracks	None	X				X	X		X		X		1
104	N-4	Naval Reserve Armory	None	X				X	X		X		X	X	1
109	N-10	Police Station	IR-42	X				X	X				X		5
110	N-17	Marine Barracks	None	X				X			X	X	X		1
111(d)	N-10	Lubrication Oil Pumphouse	IR-06					X				X		X	5
112(d)	N-10	Diesel Oil Pumphouse	IR-06					X				X		X	5
113	N-7	Tug Maintenance and Salvage Diver's Shop	IR-42	X				X	X				X	X	5
114 (113A)	N-7	Machine Shop and Maintenance Shop	IR-42	X				X		X	X		X	X	5
114(d)	N-7	Office Building	SI-31							X					4
115	N-5	Submarine Office and Training School	IR-62	X				X			X	X	X		3
116	N-5	Submarine Subsistence and Training Building	IR-62	X				X			X	X	X		3

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
117	N-4	COMSUB Barracks	None	X				X			X		X		1
118(d)	N-5	Submarine Officer Quarters	IR-23					X				X			5
119(d)	N-5	COMSUB CPO Barracks	IR-23					X							5
120	N-7	Enlisted Men's Club	None	X				X	X			X	X		5
121	N-6	Civil Training Center	IR-23	X				X	X				X	X	5
122	N-6	Electrical Substation	IR-61	X				X	X				X	X	5
123	N-8	Battery Overhaul and Electroplating Storage	IR-10	X				X	X				X	X	6
124(d)	N-11	Acid-Mixing Plant	IR-24					X				X			5
125	N-9	Submarine Cafeteria	IR-24	X				X	X		X		X		3
128	N-9	Shop Service and Work Control Center No. 1	IR-24	X				X	X		X		X		5
129	N-16	Submarine Pier Office	None	X											5
130	N-12	Machine Shop	IR-24	X				X	X				X	X	5
131	N-9	Electrical Substation U	IR-24	X					X						5
132	N-16	Service Craft Barracks	None	X					X						5
133	N-16	Latrine	IR-24	X									X		5
134	N-11	Machine Shop, Q&RA Offices, and Central Tool Room	IR-25	X		X		X			X		X	X	6
135	N-14	Electrical Substation G	None	X					X				X		6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
140	N-16	Pumphouse	IR-26	X				X	X				X		5
141	N-16	Dock Shipwright's Shop	IR-26	X				X	X				X	X	5
142A(d)	N-16	Air Raid Shelter	IR-26										X		5
144	OS	Restrooms	IR-23	X									X		5
145	N-OS	Pumphouse	IR-07					X	X				X		6
146	N-6	Industrial and Photo Laboratory, TACAN Facility	IR-23	X				X		X		X	X	X	5
150	N-4	Bus Shelter	None	X											5
154	N-18	Office	None	X				X	X				X		6
156	N-12	Rubber Shop	IR-20	X				X	X				X		5
157	N-15	Q&RA Industrial Laboratory	IR-26	X				X	X				X	X	6
158	H-51	Sentry House – Main Gate	None										X		1
159	N-9	Latrine	IR-24	X					X				X		5
163	N-15	Rubber Shop Annex	None	X											6
203	N-23	Power Plant	IR-29	X				X	X		X	X	X	X	6
204	N-21	Pumphouse	None	X									X		6
205	N-21	Pump and Compressor Plant	IR-27	X				X	X			X	X		6
206	N-14	Substation A	IR-64						X				X		6
207	N-21	Toilet	None	X					X				X		6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
208	N-21	Canteen and Shop	None	X				X					X		6
211	N-25	Machine and Electronic Test and Repair Shop	IR-28	X				X	X		X	X	X	X	6
214	N-20	Combat Weapons Systems Office	IR-28	X					X	X			X		6
215	N-23	Firehouse	None	X				X					X	X	6
217	N-18	Sheet Metal Shop	IR-29	X		X		X	X				X	X	6
218	N-OS	Restrooms	IR-28	X									X		6
219	N-OS	Electrical Substation	IR-28	X				X	X				X	X	6
224	N-25	Bomb Shelter	IR-28	X									X		6
225	N-OS	Shop Service	None	X				X					X		6
226	N-OS	Restrooms	None	X									X		6
228	N-24	Former Cafeteria	IR-28	X				X	X				X		6
229	N-OS	Electrical Substation	IR-28	X				X	X				X	X	6
230	N-26	Machine Shop	IR-28	X				X	X		X		X	X	6
231	N-22	Machine Shop	IR-28	X		X		X	X			X	X	X	6
234 (238)	S-27	Latrine and Ships Office	None	X					X				X		6
235(d)	N-26	Supervision and Storage	IR-29												6
236	N-26	Saltwater Pumphouse	None	X				X				X	X	X	6
241	N-18	Forge Shop	IR-30	X		X		X				X	X		6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
251	N-20	Industrial Relations and Control Tool Room	IR-28	X		X		X				X	X		6
252	N-20	Bus Terminal	IR-28	X				X					X		6
253	N-25	Electronics, Optical, Radio, and Ordnance Shops	IR-28	X				X	X	X	X	X	X	X	6
258	N-19	Pipefitters Shop	IR-28	X		X		X	X			X	X		6
270	N-24	Paint Shop	IR-28	X				X				X	X	X	6
271	N-24	Paint Shop Annex	IR-28	X				X				X	X	X	6
272	N-24	Riggers and Laborers Shop and Shop Service Group	None	X		X		X	X		X	X	X	X	6
273	N-24	Electrical Substation	IR-28	X					X			X	X	X	6
274	S-27	Midway Liaison Office	IR-35	X				X	X	X	X		X	X	6
275	N-23	Sheet-Metal Annex, Aluminum Casting	IR-29	X				X			X	X	X	X	6
278(d)	N-18	Storage	IR-63					X							6
279(d)	N-18	Material Storage Rack	IR-29					X							6
280	N-18	Aluminum Cleaning Facility	IR-29	X				X	X				X		6
281	N-24	Electronics-Weapons-Precision Facility	IR-28	X		X		X	X		X	X		X	6
282	N-23	Abrasive Blast Facility	IR-29	X				X	X				X		6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
300	S-27	Electrical Substation N	IR-57	X					X		X				6
301	S-27	Latrine	IR-57	X							X				6
302	S-28	Transportation Shop	IR-33	X				X	X		X	X	X	X	6
303 (302A)	S-28	Transportation Shop	IR-33	X				X					X	X	6
304	S-28	Service Station	IR-33	X				X				X	X	X	6
306	S-27	Electrical Substation I	IR-35	X				X	X				X	X	6
307	S-43	Electronic Assembly Facility	IR-55	X				X	X		X		X	X	6
308	S-27	Saltwater Pumphouse	None	X				X			X	X	X		4
311	S-27	Latrine and Ships Office	None	X				X	X		X		X		6
313(d)	S-27	NRDL Annex G	IR-35					X		X					6
313A(d)	S-27	NRDL Annex G	IR-35					X		X					6
322	H-51	Gate House	None					X	X				X	X	1
323	S-39	Shore Activities, Electronics, and Boat Shop	None					X	X		X		X		6
324	S-39	Carbon Dioxide Refilling Station	IR-65	X				X	X			X	X	X	6
351	S-39	Electronics Shop	IR-34	X				X	X	X			X	X	6
351A (352)	S-39	NRDL Electronics Laboratory	IR-34	X				X	X	X			X	X	6
363	S-28	Woodworking Shop	None	X				X	X		X	X	X	X	6
364	S-39	Radiation Hot Laboratory and Chemistry Laboratory	IR-33	X				X		X	X		X	X	6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
365	S-39	Storage Building, Offices, and Film Laboratory	None	X						X			X		6
366	S-28	Boat and Plastic Shop	IR-34	X				X	X	X	X		X	X	6
367	S-27	Ship Supervisor Field Office	IR-57	X							X				6
368	S-27	Pipefitting Shop	IR-22	X				X	X				X	X	6
369	S-27	Rigging Shop	IR-22	X				X	X				X		6
370	S-27	Restroom/Showers	IR-32	X									X		6
371	S-35	Equipment Storage	IR-36					X			X	X	X	X	6
372	S-27	Prefab Decking Shelter	IR-35	X				X			X			X	6
374(d)	S-27	Poseidon Control Hut	IR-68					X						X	6
375(d)	S-27	Poseidon Control Hut	None					X				X		X	6
376	S-27	Poseidon Control Hut	IR-68	X				X					X	X	6
377	S-27	Poseidon Systems Test Engineering	None	X				X	X				X		6
378	S-27	Restroom/Showers	None	X				X				X	X	X	6
379	S-27	Poseidon Engineering	IR-68	X				X	X			X	X	X	6
380	S-27	Poseidon Partial Full Test Machine	None	X				X	X			X	X	X	6
381	S-27	West Coast Shock Testing Facility	None	X				X			X		X	X	6
382	S-27	Poseidon Arresting System Shelter	None					X					X	X	6
383	S-27	Poseidon Shipping and Receiving Building	IR-32	X				X					X	X	6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
384	S-27	Poseidon Engineering	None	X				X				X	X	X	6
385	S-27	Poseidon Engineering	None	X				X					X	X	6
400	S-31	Ships Operational Activity Parts Receiving Storehouse	IR-36	X				X	X				X	X	6
401	S-30	Public Works Shop	IR-37	X				X			X		X		6
402	S-29	Supply Storehouse, Q&RA Offices	None	X				X	X		X		X	X	6
404	S-30	Supply Storehouse	None	X				X			X		X		6
404A	S-30	Supply Storehouse	IR-36	X				X			X		X		6
405	S-31	Supply Storehouse	IR-36	X				X			X	X	X		6
406	S-36	Storehouse, Packing and Preservation	IR-36	X		X		X			X		X	X	6
407	S-37	Ships Operational Activity Parts Offices and Supply Storage	IR-66	X				X			X		X	X	4
408	S-38	Furnace Shelter	IR-44	X				X					X	X	4
409	S-38	Welder Motor Generator Shop	IR-44	X				X	X				X	X	4
410(d)	S-38	Welder Motor Generator Shop	IR-44					X					X	X	4
411	S-38	Shipfitters Shops and Boilermaker Shop	IR-33	X		X		X	X		X	X	X	X	6
412	S-30	Railroad Scales	None	X											6
413	S-36	Supply Storehouse	IR-36	X				X	X		X		X	X	6
414	S-36	Public Works Furniture Storehouse	IR-36	X				X	X				X	X	6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
415	S-39	Storehouse	None										X		6
416	S-39	Storehouse	None										X		6
417	S-29	Acetylene, Manifolding, and Welding Engineers	IR-33	X				X			X		X	X	6
418	S-29	Q&RA Welding Engineering Facility, Metal Spray	IR-33	X				X			X		X	X	6
419	S-29	Oxygen Converter	IR-33	X				X			X		X	X	6
420	S-29	Oxygen Cylinder Charging	IR-33	X				X	X				X	X	6
421	S-29	Oxygen Control Shop	IR-33	X				X					X	X	6
422(d)	S-29	Office And Latrine	IR-09												5
423(d)	S-29	Compressor Hut	IR-09												5
424	S-29	Area Time House No. 4	IR-33	X				X			X		X	X	6
435	S-30	Equipment Storage	IR-37	X				X			X	X	X	X	6
436	S-30	Material Storage	IR-37	X				X					X	X	6
437	S-30	Pipe Storage	IR-37	X				X					X	X	6
438	S-38	Metal Spray Shelter	IR-44					X					X	X	4
439	S-37	Equipment Storage	IR-67	X				X	X			X	X	X	4
500	S-40	CPO Barracks	IR-38	X				X	X			X	X		6
501(d)	S-41	Ships Barracks	None												6
502(d)	S-41	Ships Barracks	None												6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
503(d)	S-41	Base Laundry Facility	None									X			6
505	S-40	Navy Exchange	IR-39	X				X	X				X	X	6
506(d)	S-41	NRDL Chemistry Laboratory	IR-14					X		X				X	6
507(d)	S-41	NRDL Biological Laboratory	IR-38					X		X				X	6
508(d)	S-42	NRDL Health Physics	IR-38							X				X	6
509(d)	S-44	NRDL Animal Irradiation Laboratory	IR-38					X		X				X	6
510(d)	S-44	NRDL Radiation Physics Laboratory	IR-14					X		X				X	6
510A(d)	S-44	NRDL Radiation Physics Laboratory	IR-14					X		X					6
511(d)	S-44	Offices	None					X						X	6
511A(d)	S-44	Woodworking Hobby Shop	IR-54					X	X					X	6
512(d)	S-42	Elementary School	None												6
513(d)	S-44	Barracks	None												6
514(d)	S-44	Barracks	None												6
515(d)	S-44	Military Services	None												6
516(d)	S-44	Barracks	None												6
517(d)	S-42	NRDL Biomedical Facility	IR-38					X		X			X	X	6
518(d)	S-44	Movie Theater	IR-14												6
520(d)	S-44	Dental Clinic	IR-14					X	X				X		6
521	S-44	Power Plant	IR-11	X				X	X			X	X	X	5

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
523	S-OS	Saltwater Pumphouse	IR-69	X				X	X				X	X	6
524(d)	S-35	Commissary Storehouse	IR-13					X	X				X	X	6
525	S-OS	Storehouse	IR-53	X				X					X	X	6
526	S-OS	Storehouse and Offices	None	X				X	X				X		6
527	S-OS	Electrical Substation	IR-40	X					X				X		6
528	S-OS	Electrical Substation	None	X											6
529(d)	S-41	NRDL Radioisotope Storage and Cockcroft-Walton Accelerator	IR-14					X		X				X	6
530	S-OS	Automotive Hobby Shop	IR-53	X									X	X	6
600	S-OS	Bachelor Enlisted Men's Quarters	IR-02	X					X				X		5
606	S-41	Shore Intermediate Maintenance	IR-08	X					X		X		X		4
702(d)	S-32	Storehouse and NBC Office	IR-12					X	X				X	X	6
704	S-35	Transportation Shop Car Shelter	IR-36	X				X			X	X	X	X	6
707	S-35	NRDL Research Animal Colony	IR-39	X				X		X			X	X	6
708	S-35	NRDL Biomedical Facility	IR-39	X				X		X			X	X	6
709	S-35	Gas Station	IR-36	X				X				X	X	X	6
710	S-32	Toilet	IR-36	X				X	X				X		6
803(d)	S-35	Commissary	IR-13												6
807(d)	S-45	Scrap Yard Shed	IR-04					X					X	X	6

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
808	S-46	Industrial Storehouse	None					X			X		X	X	1
809	S-45	Lumber Storehouse	None	X				X			X	X	X	X	6
810	S-45	Paint and Oil Storehouse	IR-72	X				X	X			X	X	X	6
811	S-45	Service Station – Diesel Oil Platform	None	X				X				X	X	X	6
813	S-47	Supply Storehouse, Offices	SI-77	X				X	X			X	X	X	4
815	Other	NRDL Main Laboratory	IR-74					X		X		X		X	N/A
816	H-48	NRDL High Voltage Accelerator/ Laboratory	SI-41	X				X	X	X			X	X	4
817A	H-48	Sentry House, Outside Gate	None										X		4
818	H-48	Chlorination Plant	SI-41					X					X		4
819	S-47	Sewage Pump Station A	None					X	X				X		4
820	Other	NRDL Cyclotron	IR-75					X		X		X		X	N/A
821	S-46	X-Ray Shield Facility, Substation	None					X	X				X		1
823	S-47	Sewage Pump Station	None	X									X		4
830	Other	NRDL Animal Kennel	IR-76					X	X	X				X	N/A
831	Other	NRDL Animal Kennel	IR-76					X		X				X	N/A
901	H-OS	Officers' Club	SI-19	X				X					X	X	4
906(d)	H-53	Gardening Tool House	SI-43				X	X				X	X	X	4
908	H-55	Car Garage	None												1

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
915	H-51	Bank	None					X					X		1
916	N-3	Dago Mary's Restaurant	None	X							X		X		1
917(d)	N-1	Store	None										X		1
921	H-57	Bachelors Officers' Quarters	None	X									X		1
None	N-13	Ancillary Structures	IR-58					X					X		6
None	N-OS	YYK Sheds	IR-28					X	X				X	X	6
None	S-OS	Railroad Right-Of-Way	IR-52										X		6
Residential Units	H-49	Residences	None				X								1
Residential Units	H-50	Residences	None												1
Residential Units	H-52	Residences	None				X								4
Residential Lot	H-53	Residences	IR-59 JAI					X						X	1
Residential Units	H-53	Residences	None												1
Residential Units	H-54	Residences	None				X								1
Residential Units	H-55	Residences	None				X								1

TABLE 7-2 (Continued)

FACILITY MATRIX
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Building Number	Subparcel	Past Use/Building Name	IRP Site	A	D	I	L	M	P	R	S	T	V	W	ECP Category
S-211	N-23	Boiler Building	IR-29										X		6
S-308	S-43	Saltwater Pumphouse	IR-70										X		5

Notes:

A	Asbestos
CPO	Chief Petty Officer
(d)	Demolished
D	Radon
ECP	Environmental condition of property
I	Air monitoring
IRP	Installation Restoration Program
L	Lead
JAI	Jerrold Avenue Investigation
M	Hazardous material
N/A	Not applicable
NBC	National Broadcasting Company
NRDL	U.S. Naval Radiological Defense Laboratory
P	Polychlorinated biphenyls
Q&RA	Quality and reliability assurance
R	Radiological
S	1997 Tenant Survey
T	Tanks
TACAN	Tactical Air Navigation
V	1995 Visual Site Inspection
W	Hazardous waste

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Notes:

a Reference not cited in text. Data gathered from such references appear mainly in tables and or are listed for information purposes only.

APPENDIX A

1995 VISUAL SITE INSPECTION QUESTIONNAIRE AND
1997 TENANT SURVEY QUESTIONNAIRE

(20 Pages)

1995 VISUAL SITE INSPECTION QUESTIONNAIRE

(17 Pages)

1997 TENANT SURVEY QUESTIONNAIRE

(3 Pages)

APPENDIX B

1995 VISUAL SITE INSPECTION INTERVIEW FINDINGS

(6 Pages)

APPENDIX B

1995 VISUAL SITE INSPECTION INTERVIEW FINDINGS

This section summarizes the information obtained during informal interviews conducted as part of the 1995 visual site inspections (VSI). The interviews provide additional information regarding the past and current operations. Interviews were held daily with base caretaker office personnel and/or environmental personnel regarding the areas to be inspected that day. Since most areas were unoccupied, interviews with specific building or site personnel were frequently impossible. Tenants or U.S. Department of the Navy (Navy) representatives were interviewed for occupied locations when available.

The interviews are arranged by parcel and subparcel. The subparcel designations used are the City and County of San Francisco Redevelopment Agency "blocks" established for planning purposes. Building numbers and other identifying information are included where possible to more precisely identify the area or item described in the interview.

PARCEL A

Site security, site caretakers, and site environmental personnel were present at Parcel A; however, most of the Parcel is unoccupied, so the number of these personnel was limited. Most of the interviews were conducted with Mr. Don C. Brown or Mr. Don Shannon, senior caretakers for Hunters Point Shipyard (HPS).

- Subparcel: H-51
  Contact: Don C. Brown, HPS Caretaker
  Date: 9/95
  Building 915: This building was the HPS bank; it currently houses offices for security personnel.

- Subparcels: N-2 and N-3
  Contact: Don C. Brown and Don Shannon, HPS Caretakers
  Date: 9/95

  The large paved area behind Dago Mary's Restaurant was used as a parking lot and as a staging area for temporary residences.

- Subparcel: N-1
  Contact: HPS Public Works Employee
  Date: 9/95

  Building 917 was demolished; the area was being cleared of brush and weeds for fire safety.

PARCEL B

- Subparcel: N-6, Building 121
  Contact: Wayne of HPS Public Works
  Date: 8/30/95

  At the time of the inspection, the contractors were beginning asbestos remediation in this building. The asbestos was not being removed, just repaired and sealed.

- Subparcel: N-16
  Contact: Don Shannon, HPS Caretaker
  Date: 9/3-5/95

  The inspection team requested that Don Shannon look at specified structures on the piers in this subparcel to determine if they were oil-water separators. Mr. Shannon did inspect these items and reported that they are not oil-water separators, but are access vaults for dock maintenance and electrical lines.

- Subparcel: N-2
  Contact: Eddie Sarmiento, HPS Environmental Coordinator
  Date: 8/30/95

  The inspection team observed a shed with electrical wires and soil stains. Mr. Sarmiento stated that a transformer containing polychlorinated biphenyls (PCB) was stolen from this location.

- Subparcel: N-7, Building 120
  Contact: Thomas, Caretaker for Police Athletic League (PAL) activities in this building.
  Date: 8/29/95

  Thomas assists PAL and is a plumbing contractor. He stated that limited amounts of hazardous materials were used, only paints and paint thinner. The building was used by others for automobile repair. Considerable amounts of white paint were peeling on the building interior. Thomas stated that it was a water-based paint.

PARCEL C

- Subparcel: S-27, YYK, Inc. (YYK)/Supervisor of Shipbuilding (SupShip) Area
  Contact: Tom Crosby, YYK Barge Repair Supervisor
  Date: 9/28/95

  Mr. Crosby escorted the inspector throughout the YYK area. He provided detailed

information on area operations and the materials stored. He retains material safety data sheets for all hazardous materials used in this area. YYK is responsible for barge repair and renovation. Much of the current work is apparently done on barge interiors. Commonly used materials include floor tiles and the associated mastic and coatings, paints, epoxy paints, lacquers, solvents, floor coatings, floor strippers, and detergents. Materials normally are used in 5-gallon buckets or smaller. According to Mr. Crosby, there is no asbestos in this area.

- Subparcel: S-27 YYK/SupShip Area, Building 229, Substation L
  Contact: Tom Crosby, YYK Barge Repair Supervisor
  Date: 9/28/95

  According to Mr. Crosby, the interior of Substation L contains a circuit breaker and switchboard panel, but no transformers. The transformers are located outside the substation. Outside Building 229, on the west side, is an electrical reactor that functions as a "shock absorber for electricity."

- Subparcel: S-27, SupShip Area
  Contact: Mr. Joe Donovan, SupShip, in Bldg. 813
  Date: 9/29/95

  Mr. Donovan escorted the inspector through buildings 270, 271 and 228. He stated that wastes are stored in this area, but are removed within 90 days of generation. Mr. Donovan worked at HPS prior to 1974 when the Navy closed this facility. Prior to 1974, 1,200 civilians were employed at HPS.

- Subparcel: N-23, Building 215
  Contact: On Duty Fireman
  Date: 9/18/95

  Hazardous materials at this location consist of small quantities of flammable materials stored in two lockers. Additional VSI questionnaire information for Building 215, the HPS firehouse, was provided by the fireman.

- Subparcel: N-25, Building 253/211
  Contact: Cesar Eugenio, Navy, Maritime Administration
  Date: 9/14/95

  Mr. Eugenio provided checklist information for Building 253/211. It is currently used for storage by MARAD. MARAD documents, office equipment, and ship equipment and parts are stored. It was formerly an equipment shop. The upstairs mezzanine area was used as an electronics shop and locker room. One area below the locker room was apparently used to store ordinance. Turntables on the bottom floor were used to hold ship guns for cleaning. There was extensive use of oils and cleaning solvents in the gun cleaning area. Aside from the metal turntables, this area had a wood block floor. Mr. Eugenio stated that white stains observed on the floor resulted from leaking rainwater. Inspectors observed a PCB sign on an exterior door. Mr. Eugenio felt that there were currently no PCBs in the building, but Mare Island Naval Shipyard may have previously stored PCB-containing equipment in this building.

- Subparcel: N-24, Buildings 272 and 275, occupied by Ermico Enterprises (Ermico)
  Contact: Mr. Terry Wade, environmental consultant for Ermico
  Date: 10/5/95

  Mr. Wade escorted the inspector throughout the operating areas. Ermico assembles go-carts and manufactures skateboards. They also manufacture the plywood that is cut into boards and aluminum "trucks" and wheels for the skateboards. Final painting is done elsewhere. According to Mr. Wade, cutting oils are recycled. Wastewater, from a polishing process called lapping, is discharged to the storm drain in accordance with a permit. Approximately 200 gallons per day is discharged. A transformer was observed on the north side of Building 272. Mr. Wade stated that the transformer had been installed within the past 2 to 3 years.

PARCEL D

- Subparcel: S-27, the Regunning Pier, Building 384
  Contact: Tim of the HPS Fire Department
  Date: 9/25/95

  Building 384 is used to store Fire Department equipment and supplies. The building formerly stored an old fire engine. Tim suspected that the narrow covered trenches in the floor were for electrical wiring rather than pipes or drainage. The map in the HPS Fire Department dispatch office shows this building as Building 282.

- Subparcel: S-39, Building 369
  Contact: Tenant, Young Laboratories
  Date: 9/95

  This building houses an operating laboratory performing metals analyses. The building was previously used for radiological research.

- Subparcel: S-29, Former Pickling and Plating Yard
  Contact: Mr. Ed Johnson, Navy Public Works Department (NPWD)
  Date: 9/25, 28/95

  Mr. Johnson supervises the ongoing remediation work performed by NPWD personnel. Three acid pickling tanks in the yard area measure 15 feet by 30 feet by 16 feet deep. All three tanks are contained within one concrete vault. Sludge has been removed from these tanks. Metal and concrete structures are being demolished. Buildings 422 and 423 were demolished as part of the remediation effort. Buildings included in the pickling and plating yard remediation area are used to store equipment, supplies, and fuel for equipment. One building is used as a carpentry shop. Building 420 has asbestos siding.

- Subparcel: S-38, Building 411, Tenants- Eric Landsdown, Christian Engineering, Sierra Equipment (Sierra)
  Contact: Eric Landsdown, maker of wooden bird cages and doll houses
  Date: 9/20/95

  The upper floor is occupied by the offices of Christian Engineering. The lower floor and warehouse area are occupied by Eric Landsdown in one corner, and the remainder by Sierra,

a metal recycling firm. The large pits in the floor were for the metal presses and roller machines used by Navy ship repair and maintenance personnel during its occupancy of the building. Several gantry cranes used by the Navy were removed. The floor pits, and sometimes the working floor, flood during the rainy season. According to Mr. Landsdown, the water level never rises above a stain on the side of the pit. The water leaks through holes in the roof and from broken downspouts; however, there was some liquid (water?) in most of the pits in late September.

- Subparcel: S-38, Occupied by Sierra
  Contact: Don Brown, HPS Caretaker and Eric Landsdown
  Date: 9/20/95

  According to Mr. Brown, Sierra Equipment was currently cutting up a submarine for recycling. According to Mr. Landsdown, Sierra recycles metal and used vehicle engines.

- Subparcel: S-39, Building 439
  Contact: Don Brown, HPS Caretaker
  Date: 9/26/95

  According to Mr. Brown, Building 439 was constructed and not used. Its only occupant was a toy manufacturer. Manholes for underground tanks are present on the west side of this building. Mr. Brown stated that the tanks were tested but never used.

- Subparcel: S-41, Building 606
  Contact: Don Brown, HPS Caretaker
  Date: 9/25/95

  According to Mr. Brown, Building 606 was constructed in 1974 to house personnel associated with the battleship *Missouri*, which was to be home-ported in San Francisco. The ship was subsequently located elsewhere and the building was not used. Building 606 was used briefly as a post office during Operation Desert Storm.

PARCEL E

- Subparcel: S-OS
  Contact: William McAvoy, Navy Engineering Field Activity West (EFA West)
  Date: 9/12/95

  Inspectors observed a number of rusted wood and metal structures, some with access ports on top and some filled with a foam-like material. The inspectors suspected that these items might be oil-water separators. Mr. McAvoy stated that they were probably temporary piers. These temporary piers were used as a work platforms during ship repair operations.

- Subparcel: S-OS, southern portion near former Tank S-505
  Contact: Don Brown, HPS Caretaker
  Date: 8/95

  According to Mr. Brown, there had been a PCB oil spill north of the former tank in this subparcel. Mr. Brown stated that his personnel had observed people pouring oil through

these pipes. The pipes were not observed during the VSI.

ATTACHMENT B1

1997 TENANT SURVEY OF HAZARDOUS SUBSTANCES STORAGE SURVEY NOTES HUNTERS POINT SHIPYARD

(37 Pages)

ATTACHMENT B1

1997 TENANT INTERVIEWS

This attachment summarizes the information obtained during informal interviews and building tours conducted as part of the 1997 Tenant Survey conducted from September to November 1997. Interviews were conducted with the building lessee, a person familiar with building activities, or Mr. Don Brown from the Caretakers Site Office (CSO) at Hunters Point Shipyard (HPS). The building tour occurred the same day as the building interviews. Buildings are listed by building number within each parcel.

As this survey was conducted in 1997, this is a completely new section of the environmental baseline survey (EBS).

PARCEL A

Building 808

Date Surveyed: 9/17/97
Tenant: Precision Transport
Person Interviewed: Anthony
Interviewer: Dan Ruslen
Description: Copier Paper and Toner Cartridge Distribution Center

Inside

The building contains pallets of copier paper and toner cartridges, as well as 10 to 12 25-pound tanks of propane used for the forklifts.

Outside

Two small (about 20 gallons each) drums of motor oil are present; one drum contains waste motor oil, and the other drum is almost empty.

Building 916

Date Surveyed: 9/23/97
Tenant: Dago Mary's Restaurant
Person Interviewed: Joe Ursinor
Interviewer: Dan Ruslen
Description: Restaurant

Inside

Only the following are used and stored in the building:

- Floor cleaner: 2 to 3 gallons
- Delime: 4 gallons (contains Muriatic acid, phosphoric acid, and hydrochloric acid)
- Oil: 5 to 6 ounces for the water pump
- Bleach: Store 4 gallons at a time; use 12 gallons per year

Outside

Behind the building is a 55-gallon drum used only for disposal of cooking oil.

PARCEL B

Building 114

Date Surveyed: 9/17/97
Tenant: Smith-Emery Co.
Person Interviewed: Rick Widebrook
Interviewer: Dan Ruslen
Description: Offices and Shop Area

Rick Widebrook has been employed at the company for 5 years. He said that the company does materials testing of soil, asphalt, and concrete. Small quantities (1 gallon or less) of chemicals are used for materials analysis. However, they are a small-quantity generator (SQG) (< 5 gallons per month) of waste solvents. He said that he would prepare a chemical inventory for the site and try to fax a copy by September 19, 1997.

Inside

In the largest room that extends through the building, shelves contain some chemicals that are used for field crews. The following are some of the chemicals:

- Magnaflux SKD-S2 Developer: One case of 241-gram cans (contains acetone, isopropyl alcohol, isobutane)

- Spotcheck Penetrant: Three to five 241-gram cans, two 1-gallon cans (contains white mineral oil, isobutane, dibutylphthalate)
- Bearing Swivel Joint Grease
- Paint
- Hydrofluoric Acid: Less than 1 liter
- Sodium Hydroxide: Less than 1 liter
- Hydrochloric Acid: Less than 1 liter
- Sodium Sulfate: Less than 500 grams
- Magnesium Perchlorate: Less than 500 grams

Also located in the room are two acetylene cylinders, a bandsaw containing lubricating fluid, and two 5-gallon cans of hydraulic fluid for the presses.

On one side of the large room (right of entrance) is another room with a workbench. The area contained a 1-gallon container of antifreeze. The other small rooms on this side of the building are used as offices and testing rooms with humidity controls. No chemicals are stored in these rooms.

To the other side of the large room (left of entrance) are several small rooms. One area has two small flammable storage lockers (1.5 feet by 1.5 feet by 2.5 feet) that contains small quantities of paints, lubricants, and solvents. Next to this area is a small equipment room that contains 2 gallons of paint and some epoxies that are currently used for construction. A newly constructed humidity room is also present.

The hallway leading to the room used for soil testing has two lockers. One locker contains 6 to 10 small propane bottles (approximately 1 liter each) and the other contains 1 gallon of dichloromethane and 1 gallon of hexane.

Besides a large quantity of soil, the room used for soil analysis has a black cabinet containing small bottles (< 1 liter or 500 g) of various acids, bases, and salts. Mr. Widebrook will eventually provide a list of building contents.

Outside

Behind the building is an air compressor that has blowdown. The oily emulsion is fed into a 55-gallon drum that is about half full.

On the side of the building is a kerosene furnace that is used for heating. Four 55-gallon drums of kerosene are stored on pallets next to the furnace. Two 55-gallon drums of waste hydraulic oil, five empty drums, and two 5-gallon cans of hydraulic oil also on the pallets.

About 50 feet away from the building is a large storage bin (6 feet by 7 feet by 15 feet) marked with radioactive caution labels. Inside are nuclear soil density gauges and excess equipment. Attached to the door is a current radioactive materials license.

Building 115

Date Surveyed: 9/19/97
Tenant: Finish Works
Person Interviewed: Clay Young
Interviewer: Dan Ruslen
Description: Woodworking Shop

Inside

Clay Young has been at the company since 1983. He said that everything that he uses is stored in what used to be a large walk-in refrigerator. From the interview he said that he usually has 1 pint or less of silicon spray, some lubrication oil, 6 to 7 gallons of lacquer products, 1 to 2 gallons of polyurethane, and a pint of acetone.

The walk-in refrigerator currently contains:

- MACLAL, Lacquer Thinner: No more than 5 gallons (contains alcohols, ketones, esters, hydrocarbons, and petroleum distillates)
- Penetrol, Penetrating Oil: 1 quart (contains petroleum distillates)
- Wood Finish: 1 to 2 gallons
- Lacquer: 1 gallon (contains toluene, xylene, and petroleum distillates)
- Sanding Sealer: 1 gallon
- Gray Acrylic Primer Surfacer: 1 gallon (contains methyl ethyl ketone, toluene, isopropyl alcohol, ethyl acetate, and xylene)

Next to the woodworking shop is a room that is subleased for plaster casting. Mr. Young said the plaster is water-based. No chemicals or petroleum products are used or stored in this room.

Upstairs is a room subleased as a music studio and a room subleased as an art studio. The music studio does not contain any chemicals. The art studio contains only small tubes of paint and a 1-gallon container of Turpenoid, a turpentine substitute that contains highly refined petroleum distillates.

Building 116

Date Surveyed: 9/10/97
Tenant: Frame Works
Person Interviewed: Bill Bollottee
Interviewer: Dan Ruslen
Description: Picture Framing and Occasional Art Restoration

Inside

One art studio is upstairs and one is downstairs. Several small jars of paints and solvents are on the shelves. There are too many small jars on the shelves upstairs to accurately estimate

quantities of paints and solvents, but there is probably less than 10 total gallons. A storage cabinet upstairs contains a quart bottle of concentrated nitric acid and a 5-gallon can of ethyl acetate. On one shelf is a 16-ounce bottle of chloroform. There is also a darkroom on the second floor.

Mr. Bollottee said that all waste is disposed of off site. He also said that he has no knowledge of past spills or leaking containers.

Outside

Mr. Bollottee said that for the past 4 years he has been storing his flammables in a yellow cabinet in the parking area behind the building. It contains the following:

- Batteries: Five automobile
- Butane: One to two 5-pound cylinders
- Paints and Varnishes: Approximately 50 31-ounce cans and 50 spray cans
- Turpentine: 1 to 2 gallons
- Alcohol: 1 gallon

Building 120

Date Surveyed: 9/25/97
Tenant: Police Athletic Club
Person Interviewed: Mark Hurley
Interviewer: Dan Ruslen
Description: Athletic Club

Inside

The first floor contains a kitchen, a dining area, a hallway, and an area used for storing boats. In the boat storage area is a flammable storage locker that contains 3 to 4 gallons of oil-based paints and varnishes for repairing scratches on the boats. Mr. Hurley said that they rarely use the paints and usually use water-based paints instead. Next to the locker is a 5-gallon container of descaler labeled as a corrosive. Mr. Hurley said that the descaler is rarely used.

The second floor contains athletic equipment, locker rooms, showers, and steam rooms. According to Mark, no chemicals are stored in this area.

Outside

In the front of the building is a propane tank. Mr. Hurley is unsure of its capacity. It is about 3.5 feet long and 1.5 feet in diameter (50 gallons).

In the fenced-in area behind the building is an aboveground pool and spa. In a locked area are about 4 gallons of muriatic acid and 8 gallons of chlorine-releasing tablets (approximately 24 to 32 pounds). Mr. Hurley said the club was starting to use bromide-releasing tablets (5 pounds).

Building 125

Date Surveyed: 9/23/97
Tenant: Bridenthal Cabinetry
Person Interviewed: Ted Bridenthal
Interviewer: Dan Ruslen
Description: Woodworking Shop

Inside

Most of the first floor consists of a woodworking shop. Mr. Bridenthal said the shop has a booth that was previously used for spraying lacquer. He said that they no longer use lacquer and that the booth has not been used in years. He said that the only substances that he stores are latex paints and about 3 gallons of paint thinner (mineral spirits).

An art studio is present on the first floor. It contains about 2 to 3 gallons of acrylic paints in small jars and 40 to 50 small tubes (2 to 6 ounces) of oil-based paint. There are also about 2 gallons of turpenoid (a turpentine substitute that contains highly refined petroleum distillates).

A music studio is present on the first floor; no chemicals are stored inside. The second floor is only used for offices.

Outside

Two propane cylinders used for heating are present. Mr. Bridenthal is not sure what quantity they hold. The tanks are about 4 feet high and 1 foot in diameter. He said that four cylinders are usually used in the winter.

Building 128

Date Surveyed: 9/19/97
Tenant: City and County of San Francisco (CCSF) Drug Enforcement Agency (DEA)
Person Interviewed: Don Brown (HPS Caretaker)
Interviewer: Dan Ruslen
Description: Automobile Storage

Inside

The building is used to store vehicles taken in DEA raids. Mr. Brown said that no chemicals, gasoline, or motor oil are stored at the building. Currently, the building contains 19 vehicles (oil stains are on the floor underneath many of the vehicles), four motorcycles, a boat, and an RV. A 55-gallon drum of Citrikleen (corrosive) is almost empty, as are two 5-gallon gasoline cans. Mr. Brown said that they are not used for storage, but were seized in a raid. There is also a small portable generator that runs on gasoline. An oil stain (about 8 inches in diameter) is present on the floor under the generator.

A machine shop is present in one corner of the building, but it appears to be used for woodworking. Two compressors are present in the shop area.

Another area appears to be used for changing motor oil. A full oil pan and oil stains are present on the floor. A small 5-gallon drum of ZEP Flash floor cleaner is also present.

PARCEL C

Building 134

Date Surveyed: 9/22/97
Tenant: Odaco, Inc. (Odaco)
Person Interviewed: Mark Oda
Interviewer: Dan Ruslen
Description: Refrigeration and Air Conditioning Company

Inside

A shop area that contains the following:

- Freon (1,1,1,2-tetrafluoroethane): Three cylinders
- Acetylene: Two small cylinders
- Compressed Gas: One small cylinder (contains 60 percent chlorotrifluoromethane and 40 percent fluoromethane)
- Brite Dip (corrosive): One 5-gallon drum
- Batteries: Two on shelves
- Ammoniated Hand Cleaner: Three 1-gallon cans
- Various Household Cleaners: Approximately eight 1-gallon bottles

Five 150-pound capacity cylinders are used for refrigerant evacuation and transfer. All gases are recycled by a subcontractor and ultimately go to DuPont.

A fully contained sandblasting cabinet (5 feet by 5 feet) is present with 5 gallons of sandblasting waste in the bottom.

A tool room contains 5 to 10 quarts of motor oil. There is a steel cabinet marked "flammable" that contains the following:

- Spray Paint: Approximately 30 12-ounce cans
- Latex Paint: Two 5-gallon plastic containers and approximately 10 1-gallon cans
- Cutting Oil: 1 gallon
- Paint Thinner: 4 gallons
- WD-40: 1 gallon
- Concrete Waterproofing Sealant: 1 gallon

There are no visible leaks or spills in the room.

The following items are located in an adjacent area:

- Alkylbenzene: Six 1-gallon containers
- Polyol ester (POE), lubricants: 3 gallons
- Mineral Oil: 2 gallons
- Hydraulic Fluid: Five 1-gallon containers

No leaks are evident. Approximately 200 empty 1-gallon POE containers are present, as is a heavy duty water soluble industrial solvent that contains tripropylene glycol and monopropyl ether.

In what appears to be a former maintenance shop are eight large cylinders full of refrigerant. According to Mr. Oda, the cylinders are to be returned to customers.

In the southwest end of the building are the following:

- Used Refrigerant: One 55-gallon drum
- Vacuum Pump Oil: One 55-gallon drum (half full)
- Ports Cleaning Solvent: One 55-gallon drum
- Waste Oil: One 55-gallon drum

Three empty drums and six empty freon cylinders are present. There are no oil stains on the floor and no drums appear to be leaking.

By the east entrance to the building are two solvent containers for cleaning parts. They are open to the air.

The floors in the building have minor soil staining. According to Mr. Oda, the spots are cleaned with Floor Dry.

The second floor only contains offices.

Outside

The outside area is not used by the tenant.

Building 203

Date Surveyed: 9/15/97
Tenant: Astoria Metals Corporation (Astoria Metals)
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Power Plant

Inside

Mr. Maxey said that the building was never used for storage of chemicals. Astoria Metals only has access because of electrical reasons.

Four large generators and steam tanks are no longer in use. There is a grinder and another machine with blue polychlorinated biphenyl (PCB) certification labels.

Building 211

Date Surveyed: 9/26/97
Tenant: U.S. Department of Transportation (DOT), Maritime Administration
Person Interviewed: Sherry
Interviewer: Dan Ruslen
Description: Building is used for the storage of ship parts.

Inside

Together, Buildings 211 and 253 form a very large building. The building contains mostly shut-off valves, lifeboats, cables, and ship engine parts. According to Sherry, who has worked for the Maritime Administration for about 1 year, the parts were removed elsewhere and brought to the building for storage. She indicated that the larger items were brought in by the overhead crane that runs the length of the building.

A few forklifts run on gasoline, with three 5-gallon cans of gasoline stored by Door 5. Sherry said that all oil changes are done off site.

There are also a few large metal bins filled with office equipment such as desks and typewriters.

According to Sherry, no work has been performed on the parts in the building. The building is used strictly for storage. She also stated that no chemicals or petroleum products (other than the gasoline) have ever been stored in the building.

A large pit is present in the building with some trash in it, but no chemicals or petroleum products are evident.

Building 230

Date Surveyed: 10/07/97
Tenant: Ermico Enterprises (Ermico)

Person Interviewed: Terry Wade
Interviewer: Dan Ruslen
Description: Wheel (skateboard and rollerskate) Manufacturing

Inside

The building is used for manufacturing wheels. Approximately 20 55-gallon drums of polyurethane are used or stored within the building, as is a 55-gallon drum of 1,4-butanediol. Just through the entrance are three yellow flammable storage cabinets that contain the following (some usages are indicated inside of the parentheses):

- n-Methylpyrolidone: Five 5-gallon cans
- 68 Tellus Oil: One 5-gallon can (1 can/6 months)
- 32 Tellus Oil: One 5-gallon can (1 can/6 months)
- M800 Stoner Urethane Mold Release: Approximately 12 5-gallon cans (1 can/3 days) (contains isoparaffinic hydrocarbon 400 parts per million [ppm] Cost Accounting Standard [CAS] No. 64742-48-9)

Building 253

Date Surveyed: 9/26/97
Tenant: DOT, Maritime Administration
Person Interviewed: Sherry
Interviewer: Dan Ruslen
Description: Building is used for the storage of ship parts.

Inside

See notes for Building 211, also leased by DOT, Maritime Administration.

Building 272

Date Surveyed: 9/19/97
Tenant: Ermico
Person Interviewed: Terry Wade
Interviewer: Dan Ruslen
Description: Offices, Skateboard Manufacturing Shop, Go-Cart Manufacturing Shop, and Storage

Inside

One section of the building contains offices. There is a large room where a few automobiles are stored. There is also a small room where go-cart frames are stored. The center section of the building is mostly empty, except for the storage of approximately 30 55-gallon drums of polyurethane.

The sections used for skateboard and go-cart manufacturing contain the following:

- Waste Oil: One 55-gallon drum
- Waste Cutting Oil: One 20-gallon can
- K-4 Catalyst: 15 gallons (contains 25 percent aluminum chloride CAS No. 7446-70-0 and 5 percent phosphoric acid CAS No. 7664-38-2)
- Devcon 5-minute Epoxy: 20 9-ounce boxes (contains ethyl-2-cyanoacrylate CAS No. 7085850 and poly methyl methacrylate CAS No. 9011147)

According to the section supervisor, the wood glue that is used in the manufacturing process is nonhazardous.

Building 275

Date Surveyed: 10/07/97
Tenant: Ermico
Person Interviewed: Terry Wade
Interviewer: Dan Ruslen
Description: Aluminum Casting Shop

Inside

The building is used for manufacturing trucks for skateboards and roller skates. According to the chemical inventory and from the site tour, the building contains the following:

- Poly Fast-Cut: 250 pounds (5,625 pounds per year consumed in process) (contains 2 to 5 percent sodium dodecylbenzene sulfonate CAS No. 25155300 and 50 to 60 percent sodium tetraborate CAS No.1303-96-4)
- Burnish #30: 600 pounds (18,240 pounds per year to publicly owned treatment works [POTW]) (contains sodium phosphate CAS No. 7758-29-4, diammonium sulfate CAS No. 7783-20-2, dodecylbenzene sulfonate CAS No. 24144-30-0, and sodium tallowater CAS No. 8052-48-0)
- Santrol 35: One 55-gallon drum (360 gallons per year) (contains ethyl-2-cyanoacrylate CAS No. 7085850 and poly methyl methacrylate CAS No. 9011147)
- Liquefied Propane: 40 gallons (530 gallons per year)

The number in parentheses indicate estimated usage listed on the chemical inventory.

Outside

Approximately 30 feet from the building are two propane aboveground storage tanks (AST). Their capacity and throughput were provided as such on the chemical inventory:

- Propane: 800 gallons (40,270 gallons per year)

Building 281

Date Surveyed: 9/22/97
Tenant: San Francisco Redevelopment Agency (SFRA) (empty)
Person Interviewed: Don Brown (HPS Caretaker)
Interviewer: Dan Ruslen
Description: Vacant

Inside

Most of the building is empty. One room has desks, pallets, cables, and other miscellaneous items. Two portable welding units with orange tanks are present and are about 3 feet long and 1.5 feet in diameter. A large (3 feet by 3 feet by 6 feet) oily piece of equipment is on wood blocks. Oil stains are visible on the floor underneath the equipment. Oil stains are also present throughout the main section of the building. The floor is made of wood blocks.

Building 300

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Electrical Substation

Inside

Mr. Maxey said that the building was never used for storage of chemicals. Astoria Metals only has access because of electrical reasons.

There are three rows of batteries (possible backup system) elevated off of the floor. Rust stains are present on the floor underneath the batteries.

Several transformers appear to be fairly old; it is unknown if they contain PCBs.

Outside

There is one white garbage bin outside with several 5-gallon gasoline and solvent cans. Most of the cans are empty. The cans will be removed immediately and placed in the flammable storage shed.

Building 301

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen
Description: Men's Showers and Locker Rooms

Inside

Mr. Maxey said that the building was never used for storage of chemicals nor have there been any chemical spills within the building.

Outside

On the north side of the building, there is a changing area for employees to remove lead-contaminated coveralls. The coveralls are placed in a garbage can. At the end of the day, the garbage can is removed, and the coveralls are sent to be cleaned.

About 75 feet from the south side of the building is a flammable storage shed that has been there for over 1 year. It contains the following:

- Motor Oil, SAE 30: Two 55-gallon drums
- Hydraulic Oil: Two 55-gallon drums
- Antifreeze: Three 55-gallon drums
- Epoxy Resin: Two 5-gallon containers (CAS No. 25068-38-6)

Several empty 5-gallon containers are in the storage shed (apparently used for transfer of material from larger drums).

Building 367

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Site Office

Inside

Mr. Maxey said that the building was never used for storage of chemicals nor have there been any chemical spills within the building.

Outside

A 250-gallon propane tank is present about 10 feet from the south side of the building. About 100 square feet (ft^2) from the building is a diesel AST that holds approximately 1,150 gallons.

Dry Dock 4 (including piers)

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)

Interviewer: Dan Ruslen and Olivia Jacobs
Description: Dry Dock 4

Don Maxey is the current safety manager for the site. He has been employed by Astoria Metals for about 4 months. He said that the prior safety manager only was employed for about 6 months.

In the past, sandblasting has been done at the site. According to Mr. Maxey, sandblasting and repair of a barge will commence in a few months. However, for the past year or two, site operations have consisted solely of dismantling three ships: the *Ashtibula*, *Navisota*, and the *Glomar Explorer*. According to Mr. Maxey, a demolition permit has just been filed for a fourth ship, the *Gaffey*. The approximate arrival dates of the four ships are as follows: *Ashtibula* in December 1995, *Navisota* in October 1995, *Glomar Explorer* in November 1996, and *Gaffey* in November 1995.

The ships are dismantled section by section. Some parts, such as generators, are removed and sold. The steel is cut into 2-foot by 5-foot sections. Prior to dismantling, any diesel and mineral oils are removed. Water is put through a separator to remove any diesel or oil. Asbestos and fiberglass are also removed for disposal. The bottom of the ships usually contain mud. The mud is removed, profiled, and sent for disposal.

Large quantities of asbestos have been removed from the *Navisota*, *Ashtibula*, and the *Gaffey*. The asbestos is loaded into bins on the ships. When full, the bins are removed from the ships and stored on the south side of the dry dock toward Building 301 until removed for disposal. Each bin holds 17 cubic feet of material. Each weighs approximately between 8,000 to 12,000 pounds when full. There are currently four bins (three full).

Waste diesel and mineral oils removed from the ships are stored in tanks to the north side of the dry dock. The tanks hold 7,000 gallons each. Currently, both tanks are empty. An oil-water separator is next to the tanks.

At the perimeter of the property, west of the dry dock, are two 1,150-gallon propane ASTs. The tanks are used to fill 15 to 20 propane cylinders that are employed at various locations around the dry dock for metal cutting.

At the perimeter of the property to the east of the dry dock is a large liquid oxygen AST. The capacity is listed at 27,000 pounds.

Mr. Maxey said that there have not been any spills since he has been working (4 months). A review of Astoria Metals' records indicated that there was a diesel spill cleaned up on April 3 and April 4, 1997. According to the manifests, three rolloffs (29,000 pounds) of diesel-contaminated absorbent manifests estimated the contamination to be between 1 and 5 percent. After asking other employees, Mr. Maxey found that the spill occurred on the north side of the dry dock.

Between Dry Dock 4 and Building 367 is a flammable storage shed that contains the following:

- Roofing Cement: Four 5-gallon containers
- Motor Oil: Two 5-gallon containers
- Petroleum Lubricating Grease: Three 5-gallon (15.9 kilograms) containers

North State Environmental analyses, transports, and disposes of Astoria Metals' solid and liquid wastes. Global Environmental (Global) previously did the asbestos removal work up until July 18, 1997. At that date, all of Global's on-site employees became employees of Astoria Metals.

PARCEL D

Building 302

Date Surveyed: 9/12/97
Tenant: Golden Gate Railroad Museum
Person Interviewed: Mike Mangini
Interviewer: Dan Ruslen
Description: Locomotive Restoration Area

Inside

The building is used for locomotive parts storage and as a workshop for restoration. There are several large pieces of machine shop equipment. Mr. Mangini said that after the equipment is purchased, it is necessary to add hydraulic oil. On the day of the facility tour, there was a leaking 55-gallon drum of hydraulic oil by the vertical lathe. Mr. Mangini said that the drum was only there temporarily and that it would be removed.

The following substances are also stored in the shop area:

- Corrosion Inhibitor: Two 55-gallon drums
- Safety Kleen: Two 30-gallon drums (contains C9-C13 saturated hydrocarbon 85 percent by weight)
- Tellus Oil 32 (cutting oil): Four 5-gallon drums (contains highly refined petroleum oils)

There is also a small, very clean shop area that contains one cylinder of acetylene.

Outside

No chemicals or petroleum products are stored or used outside.

Building 307

Date Surveyed: 9/26/97
Tenant: Wedrell, Wilson, and Sons/SFRA
Person Interviewed: Wedrell James
Interviewer: Dan Ruslen
Description: General Contractor. Building is currently empty.

Inside

Wedrell James, a general contractor, took over the lease from SFRA about 1 month ago. Both Buildings 307 and 381 are currently empty.

Building 307 will be used for tool and equipment storage. It will also have a shop area for working on equipment.

Building 381 will be used for offices and as a shop area.

Mr. James said that he currently rents equipment, but is planning to purchase some. Once he does, he will be performing routine maintenance and repairs on site. He also said that he will eventually apply for a fuel AST.

Outside

Mr. James said that he would be storing concrete, asphalt, and soil for fill material on the property.

Building 308

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Saltwater Pumping Station

Inside

Mr. Maxey said that this is the first time that he has been in this building. He said that he does not know if the building was ever used for storage of chemicals.

An old transformer is located within the building; its PCB content is unknown.

Building 311 (On Pier)

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Former Office and Latrine

Inside

Mr. Maxey said that the building was never used for storage of chemicals nor have there been any chemical spills within the building.

Building 363

Date Surveyed: 9/22/97
Tenant: Quality Craftsman
Person Interviewed: Scott
Interviewer: Dan Ruslen
Description: Woodworking Shop

Inside

Most of the building is used for woodworking. According to Scott, the company only uses water-based latex paints. He said that the forklifts are electric and rarely need lubricating oils. One cylinder of acetylene is present.

Scott said that the company typically stores 20 to 30 gallons of lacquer and about 10 gallons of paint thinner (mineral spirits) for use in a spray booth.

Outside

Nothing is stored outside.

Building 364

Date Surveyed: 9/11/97
Tenant: Young Laboratories
Person Interviewed: Ron Young
Interviewer: Dan Ruslen
Description: Laboratory for Metals Analysis

Inside

Prior to the survey of the facility, Ron Young prepared a list of hazardous chemicals and hazardous wastes stored in the laboratory. The following items were listed:

- Nitric Acid: 8 gallons
- Hydrochloric Acid: 8 gallons
- Sulfuric Acid: 1 gallon
- Ammonium Hydroxide: 2 gallons
- Hydrofluoric Acid: 0.5 gallon
- Waste Nitric Acid: 3 gallons
- Waste Hydrochloric Acid: 5 gallons
- Waste Sulfuric Acid: 0.33 gallon

During the survey, Mr. Young indicated that he disposes of approximately 200 pounds per year of cupels (small ceramic containers) contaminated with lead. The lead is used as a catalyst in the metals analysis. He said he stores and uses about 10.5 pounds of lead per year

In a storage room, he also has the following:

- Hydrogen Peroxide: 1 gallon
- Acetone: Less than 1 gallon
- Alcohols: Less than 1 gallon
- Paints: 2 gallons
- Ether: Less than 1 quart
- Potassium Nitrate: 20 pounds
- Borax: 100 pounds
- Potassium Cyanide: 100 grams

Building 366

Date Surveyed: 9/24/97
Tenant: Christian Engineering
Person Interviewed: Tom Chang
Interviewer: Dan Ruslen
Description: Manufacturing Shop

Inside

Tom Chang has been at the company since 1982. The leased area is used for the manufacturing of power screws and conveyors for industrial cooling and heating units. Several pieces of machine shop equipment are present. There is a drill press with about 6 ounces of oil on the floor. Oil pans are present underneath some of the other equipment.

In one area are two pallets with 55-gallon drums on top. One drum is for waste motor oil. Another drum is for waste hydraulic oil. One drum contains new hydraulic oil. There are also two empty drums. In the same area, there are also 15 5-gallon cans of heat transfer fluid (contains partially hydrogenated terphenyls CAS No. 61788-32-7). Only one 5-gallon can of heat transfer fluid is full. Mr. Chang said that the company uses only about one 5-gallon can per year and have been stacking the empty cans since he has been there.

The heat transfer fluid is used in an oil heater. Mr. Chang said that about 5 gallons are used per year. He indicated that the fluid vaporizes. The floor underneath the equipment is very oily.

With some of the other equipment, cutting fluid (Dromrus Oil B) is used. He said that every 1 to 1.5 years the firm orders one 5-gallon can.

There is a parts washer that contains approximately 15 to 20 gallons of Safety Kleen. He said that it is disposed of off site about every 2 weeks.

There are two cylinders of liquid propylene used for cutting metal. Each one contains 50 pounds. The only other compressed gases used are oxygen and argon.

There are 10 bins of Methocel (cellulose ether). Each holds 50 kilograms of product. Mr. Chang said that the company has occasionally been testing the material for the last 2 to 3 months.

In another section of the building, two 2.5-gallon containers of solvent degreaser (contains 1,1,1-trichloroethane) are present. Mr. Chang said that it is used for cleaning the motors on the welding machines and the amount they have lasts approximately 2 to 3 years. He indicated that it vaporizes after spraying.

Next to the roll-up door at the rear of the building is a flammable storage area with a roll-up door. There are approximately 20 empty 5-gallon oil and solvent containers and about 30 empty 1-gallon cans of paints and primers. Mr. Chang indicated they do not use much paints or solvents and have been storing the empty containers since he has been there. The following items are present:

- Valvata J680, forklift oil: One 5-gallon container
- Mobile Gear 627, machining oil: One 5-gallon container
- Unax AW 32 oil: One 5-gallon container
- Xylene (xylol): One 5-gallon container
- Lubriplate: 6 gallons (19 kilograms)
- Antifreeze: 3 gallons
- Naptha: 1 gallon
- Acetone: 1 gallon
- Equipment enamel paint: 10 gallons (contains petroleum distillates)
- Primer: 3 gallons (contains ester, ketone, petroleum distillate solvents, and ethylbenzene
- Polyamide epoxy system: 1 gallon (contains propylene glycol, methyl ether, and xylol)
- Developer: 12 12-ounce cans (contains 1,1,1-trichloroethane)

Building 372

Date Surveyed: 9/15/97
Tenant: Astoria Metals
Person Interviewed: Don Maxey (Safety Manager)
Interviewer: Dan Ruslen and Olivia Jacobs
Description: Hazardous Materials Storage

Inside

The structure is used for storage of some of the hazardous materials that are removed from the ships prior to or during dismantling. From the ships that have been worked on during the past year, the structure contains the following:

- Diesel and Mineral Oils (mixture): 15 55-gallon drums
- Floatcoat: 15 55-gallon drums
- Lead: Nine 55-gallon drums

The diesel/mineral oil mixture is from the *Navisota* and the *Ashtibula*, while the lead is from the *Glomar Explorer*. Mr. Maxey said that he does not know of any releases or disposals of the substances in the area.

Outside

A few feet from the north side of the structure, there appears to be an oil stain approximately 3 feet in diameter on the ground (soil).

Building 381

Date Surveyed: 9/26/97
Tenant: Wedrell, Wilson, and Sons/SFRA
Person Interviewed: Wedrell James
Interviewer: Dan Ruslen
Description: General Contractor; building is currently empty.

Inside

See notes for Building 307, which is also leased by Wedrell, Wilson, and Sons through the SFRA.

Building 401

Date Surveyed: 10/08/97
Tenant: DiPaolo and Barber
Person Interviewed: John DiPaolo
Interviewer: Dan Ruslen
Description: Art Studios

Inside

The area that John DiPaolo leases on the second floor consists of three art studios. The art studio that he used contains the following:

- Paint Thinner (mineral spirits): 1 gallon

- Denatured Alcohol: 1 quart
- Oil-Based Paint: 3 gallons
- Workable Fixatif: One spray can

The studio across from his contains the following:

- Turpenoid: 1 gallon
- Paint Thinner: 1 gallon
- Acrylic Paints: 5 gallons

The next (third) studio contains:

- Turpentine: 1 gallon
- Latex Paints: Approximately 30 gallons
- Acrylic Paints: Approximately 10 gallons

Building 401

Date Surveyed: 10/03/97
Tenant: James Heagy
Person Interviewed: James Heagy
Interviewer: Dan Ruslen
Description: Buys and sells miscellaneous items; building is used for storage.

Inside

Jim Heagy is a chemist who has a side business in which he buys miscellaneous used items, stores them at Building 401, and eventually tries to sell them for a profit. The building contains electronics such as old computers, typewriters, and circuit boards. There are a lot of items associated with printing. He also has larger items such as old capacitors and transformers. He said that he is retiring as a chemist and is in the process of cleaning up the building.

Various chemicals and petroleum products are stored throughout the building. On the first floor where printing items are stored are two to three quart-sized cans of printing ink, about 2 gallons of oil-based paint, and a container with 100 pounds of potassium bromide.

In the main (middle) section is a cart containing approximately 15 gallons of ammonia. Mr. Heagy said it has been there for over 1 year. There is also a box that contains one 1-gallon bottle of hydrochloric acid and two 1-gallon bottles of nitric acid.

By the entrance, there is a red flammable storage cabinet that contains the following:

- Duplicating Fluid: 15 1-gallon cans
- Isopropyl alcohol: 2 gallons
- Xylene: 0.5 gallon

- Methyl ethyl ketone (MEK): 0.5 gallon
- Insulating Oil: 5 gallons
- Belt dressing spray: Four spray cans
- Gear Lubricating Oil: 0.5 gallon

Towards the middle of the building, there was a yellow flammable storage cabinet that contained the following:

- Formula 116 Rubber Rejuvenator: 6 gallons (contains 1,1,1-trichloroethane; petroleum distillates; toluene; methyl isobutyl ketone; and 2-propoxyethane)
- Lubricating Oil: One 5-gallon can (half full)
- Blanket Rejuvenator: One 5-gallon can (contains methylene chloride, aliphatic and aromatic hydrocarbon distillates, toluene, ketone, glycol ether, and less than 4 percent methanol)

A separate section downstairs is shared by another person. There are two full cylinders of propane for the forklift, approximately six gallons of Rustoleum on a shelf, and a 5-gallon container of pump oil that is half-full. There are also about 15 55-gallon drums (most are empty) for the storage of oil removed from old transformers. Mr. Heagy said that they (mainly the other person) are in the process of removing the oil from the transformers. He said that there is approximately 300 gallons of transformer oil in the drums and still in the transformers. He said that he was not sure if the transformers were old enough to contain PCBs.

The second floor is used for more storage. The used transformers are stored there. There is one cylinder of acetylene, one 5-gallon container of Shell Diala Oil AX, 1 gallon of MEK, 1 gallon of hydraulic jack oil, and approximately 3 gallons of acrylic enamel reducer (contains acetone, toluol, ethylene glycol, and mono butyl ether acetate).

Outside

Along the building is various debris. There are old computers and electronic parts and equipment. However, no chemicals or petroleum products are stored outside.

Building 401

Date Surveyed: 9/19/97
Tenant: Patricia Powers
Person Interviewed: Scott Verlado
Interviewer: Dan Ruslen
Description: Painting Studio

Scott Verlado has been renting the one room upstairs for about 8 years. In the room, there are hundreds of paintings on the walls and stacked in rows against the walls. To the left of the entrance are approximately 50 to 75 1-gallon cans of latex paint. There are also 20 to 30 cans of spray paint. To the right of the entrance is a flammable storage locker containing more paint and approximately 2 gallons of paint thinner (turpentine and mineral spirits). On a work bench in the center of the room are 10 to 20 tubes of oil-based paint.

Building 401

Date Surveyed: 9/29/97
Tenant: West Edge Design
Person Interviewed: Tony Dominski
Interviewer: Dan Ruslen
Description: Office, Metal shop, and Some Storage

Inside

In the work shop area, propane is used for cutting and welding metal. According to Mr. Dominski, there are usually four propane cylinders in the shop area. One is large, having a capacity of 15 gallons. In another small room used for storage are seven 12-ounce cans of a galvanizing fluid.

For the leased property, which includes Building 435 and a small building/shed used for flammable storage, West Edge Design has a recent hazardous substances certificate from the City of San Francisco listing the estimated hazardous liquids at 92 gallons and the compressed gases at 2350 cubic feet.

Outside

Across from Building 401 is a small building/shed that is used for flammable storage. Inside the building, the following items were stored or are normally stored according to Mr. Dominski:

- Lacquer Thinner: 20 gallons
- Lacquers: Less than 20 gallons
- MEK: 2 gallons per year
- Paint and Epoxy Remover: 3 gallons
- Latex Paints: 20 gallons
- Kerosene: 5 gallons
- Etching Solution: Less than 10 gallons (contains selenic acid, selenium oxide, and copper sulfate)
- Etching Primer: Less than 20 gallons (contains phosphoric acid)

Building 402

Date Surveyed: 9/19/97
Tenant: Vacant
Person Interviewed: Don Brown (HPS Caretaker)
Interviewer: Dan Ruslen
Description: Vacant

The building was previously used for storage by a moving van company and by Westinghouse. The last tenant was the Aboriginal Black-Man Union (ABU). According to Mr. Brown, it is expected to become the CSO when the city takes over the property.

Inside

The first floor is empty. There is a small room that contains hydraulic oil for the elevator. Mr. Brown estimates that the tank will hold about 200 gallons. The second floor has only been used for offices.

Building 404

Date Surveyed: 9/10/97
Tenant: Mina Metals
Person Interviewed: Chris Thomason
Interviewer: Travis Taylor
Description: Sheetmetal Fabrication (heating, ventilation, and air conditioning [HVAC]) and Storage

Inside

Mr. Thomason indicated that the firm stores 300 to 400 gallons of adhesives and 1,000 gallons of duct sealer for distribution only. On the day of the site visit, the building contained the following:

- Duct Seal: Approximately 270 1-gallon containers (contains hexane and toluene)
- Eco Spray Adhesive: 18 5-gallon containers (contains hexane and toluene)
- MEI Mono-Track Spray Adhesive: Seven 5-gallon containers (contains dibutylphthalate and toluene)

A large machine shop area contained the following:

- Motor Oil: One 55-gallon drums
- Shell Dromus B (water soluble oil): One 55-gallon drum
- MEI Duct Sealant: One 55-gallon drums (contains polyvinyl acetate)
- Propane: Five cylinders (7.2 gallons each)
- Acetylene: Two cylinders (100 cubic feet each)
- Harvey's Thread Cutting Oil: 2 gallons
- Paint Thinner: 1 gallon (on tables)
- Paint Epoxy Remover: 1 gallon

Underneath the machine shop equipment were stains from the cutting oil. Underneath the drum of motor oil was also a large stain. According to Mr. Thomason, the drum had been there for about 1.5 years.

In the machine shop area were two metal storage cabinets labeled "flammable." One cabinet contained approximately 25 to 30 1-gallon cans of latex paint. The other cabinet contained the following:

- Enamel Paint: Approximately 50 spray cans
- Spray Galv, weld thru primer: 12 spray cans
- Metal Etch: 1 gallon (contains phosphoric acid, nitric acid)
- Acetone: 1 gallon
- Rustoleum: 1 gallon
- Turpentine: 1 pint
- Gasoline: 5 gallons (in and out)
- Pensol, naptha solvent: 5 gallons

Another small room is used for storage. On the shelves in the room were 12 12-ounce cartridges of a multipurpose machine grease and 10 12-ounce cartridges of Chevron Dura-Lube Grease (also a multipurpose grease).

Building 407

Date Surveyed: 9/11/97
Tenant: American Van Lines
Person Interviewed: Ron Jackson
Interviewer: Dan Ruslen
Description: Moving Company; building is used for furniture storage.

Inside

The facility tour was conducted by Arthur, who has worked there for over 1 year. The building contains offices. Most of the building is used for temporary storage of furniture. There is a small (10- by 10-foot) work area with a radial saw. No visible storage of chemicals was apparent.

The interview was conducted with Ron Jackson. He said that the company only has three 25-pound propane cylinders to run the forklifts. Otherwise, no hazardous substances or petroleum products are stored at the facility.

Building 411

Date Surveyed: 9/24/97
Tenant: Christian Engineering
Person Interviewed: Bob Christian

Interviewer: Dan Ruslen
Description: Offices on second floor

Inside

Christian Engineering occupies the second floor of the building. The area is only used as offices and conference rooms. No chemicals or petroleum products are stored.

Building 411

Date Surveyed: 9/24/97
Tenant: Eric Landsdown – The Dollhouse
Person Interviewed: Eric Landsdown
Interviewer: Dan Ruslen
Description: Woodworking Shop and Wood Storage

Inside

All shop equipment is used for building wooden dollhouses. A small (1-quart) propane torch and 1 gallon of paint remover (contains methylene chloride and methanol) are present in the shop area. Mr. Landsdown said that he only had them for temporary usage.

Outside

There is a flammable storage locker that contains the following (all quantities are approximate):

- Epoxy Paint Converter: 4 gallons (contains xylene and petroleum distillates)
- Industrial Finish Reducer: 1 gallon (contains xylene)
- Muriatic Acid: 3 gallons
- Bleach: 0.5 gallon
- Mineral Spirits: 5 gallons
- Alcohol: 1 quart
- Xylene: 1 gallon
- Lacquer: 1 gallon
- Lacquer Thinner: Less than 1 gallon
- Enamel Paint: 5 gallons
- Motor Oil: 2 gallons
- Lubricants: 3 spray cans

Building 411

Date Surveyed: 9/23/97
Tenant: Sierra Western Equipment
Person Interviewed: Charles Anderson
Interviewer: Paul Jones
Description: Used and New Equipment Sales; building is used for equipment storage.

Inside

The building is used for storage of equipment such as water hoses, pumps and pump parts, diesel engines, forklifts, small tractors, shipping containers, and various Navy surplus.

In a steel fire-safe cabinet are small quantities of various paints and thinners; all are in 1-gallon or smaller containers. Approximately 10 to 15 gallons of paints and thinners are present. There are also 20 to 30 spray paint cans in the cabinet.

One 55-gallon drum is used for the temporary storage of empty aerosol cans. The drum is emptied on a regular basis by Clearwater Environmental.

There are two 5-gallon cans of hydraulic oil, one 55-gallon drum of waste hydraulic oil, and one 55-gallon drum of waste motor oil in secondary containment.

Outside

There is a 500-gallon AST containing diesel. The tank is in a steel secondary containment with a plastic liner. There are no visible leaks or evidence of breaches of secondary containment.

Building 417

Date Surveyed: 9/17/97
Tenant: Hydro-Chemical Services, Inc. (Hydro-Chem)
Person Interviewed: Ross Allen
Interviewer: Dan Ruslen
Description: Small Work Area

Inside

The structure is a small open work area. Only one 55-gallon drum used for oily rags and garage sweep is stored in the area. About one to two drums are generated per year.

Building 418

Date Surveyed: 9/17/97
Tenant: Hydro-Chem
Person Interviewed: Ross Allen

Interviewer: Dan Ruslen
Description: Offices and Shop Area

Ross Allen has been at this location for 14 years. The HPS Caretaker said that the site was used for truck repair. Mr. Allen said that he does not store anything that would be regulated under 40 Code of Federal Regulations. He said that he has less than 200 cubic feet of acetylene and oxygen at the site.

Inside

Most of the building is used for three offices. However, a shop area (approximately 20- by 40-feet) is within the building. In the shop is a parts washer that holds 10 gallons of diesel. It is changed every 6 months. There is also about 5 gallons of lubricating oils (nonhazardous). He said that sometimes he has a 5-gallon can with some gasoline or diesel in it. He mentioned that all oil changes are done at a service station (off site).

Outside

Next to the building is a flammable storage locker that contains about 5 gallons of lubricating oils (nonhazardous), approximately 10 spray cans, and three 1-gallon cans of paint. In the yard area is a 25-gallon drum used for waste oil that is inside a larger drum (possibly fiberglass) for spill prevention.

Building 419

Date Surveyed: 9/19/97
Tenant: Vacant
Person Interviewed: Don Brown (HPS Caretaker)
Interviewer: Dan Ruslen
Description: Vacant

Inside

The building previously was used for storage by the public works. There is only an empty 55-gallon drum that contained engine lubricating oil.

Building 424

Date Surveyed: 9/17/97
Tenant: Hydro-Chem
Person Interviewed: Ross Allen
Interviewer: Dan Ruslen
Description: Laundry, Showers, and General Storage

Inside

The building used to be an old timekeeper's shed. According to Mr. Allen, no hazardous materials or petroleum products have ever been stored in the building. The areas that are used for storage contain items such as clothes and mattresses.

Building 435

Date Surveyed: 9/29/97
Tenant: West Edge Design
Person Interviewed: Tony Dominski
Interviewer: Dan Ruslen
Description: Paint Spray Booth and Storage

Inside

Most of the area leased by West Edge Design is used for storage of metal and equipment. There is a booth used for painting the metal designs. Mr. Dominski estimated that it usually contains 5 to 10 gallons of thinners and less than 20 gallons of waterborne epoxy acrylics.

Outside

Against the outside of the building is an area used for storage of compressed gas cylinders. Two acetylene cylinders and one cylinder of hydro-flame (propane) were present.

Building 606

Date Surveyed: 10/20/97
Tenant: SFRA (Police)
Person Interviewed: Edward Ochi and Nick Bothney
Interviewer: Dan Ruslen
Description: Offices and Police Vehicle Storage

Nick Bothney (Police Department) and Edward Ochi (Department of Public Health) conducted the tour through the building while answering questions for the survey.

Inside

Edward Ochi said that the police moved into the building in February 1997. A crime lab will be moving in as early as December 1997.

The north end of the building is used for offices and several vacant rooms will be occupied by the crime lab.

Most of the building is used for storage. A locked section within the west side of the building contains items used in court cases. Mr. Bothney said that it was used by another department and that he did not have access.

The main section of the building contains police vehicles and motorcycles. There is also a small boat and two small helicopters.

Mr. Bothney said that no fuel is stored at the site for the vehicles and that oil changes are done off site.

To the east side of the building is a work area adjacent to where the motorcycles are parked. Mr. Bothney said that the motorcycles required frequent routine maintenance that requires lubricating the parts. There were two 55-gallon drums of waste motor oil on a pallet and another 55-gallon drum of new motor oil in the work area.

Also in the work area were two storage lockers with flammable placards. One locker contained riding gear (helmets and gloves). The other locker contained small quantities of lubricants such as WD-40. There was also 4 gallons of antifreeze in the locker.

To the west side of the building was a desk used for cleaning weapons. There were two 1-liter bottles of a cleaning solvent on the desk. Next to the desk was a safe with ammunition stored inside. Mr. Bothney did not have access, but said that only small quantities of ammunition were stored inside.

In the vehicle storage area was one cylinder of acetylene.

Outside

No chemical or petroleum products are stored outside the building.

Land Between Buildings 371 and 702

Date Surveyed: 9/2/97
Tenant: Circosta Iron and Metal (Circosta)
Person Interviewed: Don Brown (HPS Caretaker)
Interviewer: Dan Ruslen
Description: Scrap Metal Yard

Inside

Mr. Brown pointed out the area leased by Circosta. The area is used for storing large pieces of steel and iron (many I-bars). There are several (approximately 30 to 40) large trash bins; most are empty, and some contain scrap metal. Empty truck beds are also stored in the yard. There is a gas or diesel forklift that appears to be inoperable. No visible ASTs or drums are present on the property.

PARCEL E

Building 371

Date Surveyed: 10/10/97
Tenant: S&W Production

Person Interviewed: Steve Selhorn
Interviewer: Dan Ruslen
Description: Used Automobile and Automotive Parts Storage

Mr. Selhorn said that the building was used for autobody work between 1983 and 1989. Since 1989, the building has only been used for the storage of old automobiles and used automotive parts. He currently does automobile restoration as a hobby, but does not do any of the work at the site.

Inside

The floor space within the building is completely covered with old automobiles and used automotive parts. There is a half-full 55-gallon drum of waste oil near the middle of the building. Mr. Selhorn said that he usually stores two cases (12 1-quart bottles each) of motor oil. To the rear of the building is an old gray metal cabinet used for storage. Since there are no lights and most of the cans are covered with rust, it is difficult to exactly determine the contents. Mr. Selhorn estimates the following:

- Reactive reducer: 1 gallon (contains resins, ketones, petroleum distillates, and xylene)
- Paint: 2 gallons
- Coatings: 3 gallons
- Bondo, plastic dent fill: 1 gallon
- Seam sealer (for windows): One 12-ounce tube

Mr. Selhorn also indicated that he does not store batteries or gasoline. He said that all of his radiators have been previously stolen, so he does not have a need for antifreeze. Two small (approximately 20 gallon) drums are marked transmission fluid. However, Mr. Selhorn said that the drums are empty and were given to him that way.

Outside

Old automobiles and some used automotive parts and trash are present in front of the building. However, no storage of chemicals or petroleum products is evident.

When asked about spills or on-site disposal, Mr. Selhorn mentioned that there was an incident about 1.5 years ago. He said that a truck trailer next to the building was leaking oil. He said that he was informed by the Navy about the problem. However, he told the Navy that it was not his truck, and that he thought it might be owned by Circosta Iron and Metal, who leases the adjacent property. According to Mr. Selhorn, a 55-gallon drum of oil on the truck had been left open. Rainwater filled the drum causing it to overflow. He said that the truck eventually was removed, but he also does not know who moved the truck. The spill area, which is approximately 40 feet from the southwest corner of the building, is too dirty to tell if the spill was ever removed.

Building 405

Date Surveyed: 9/12/97
Tenant: Clean Comp
Person Interviewed: Chuck Grimes
Interviewer: Dan Ruslen
Description: Equipment (forklifts and pallet jacks) Storage

Mr. Grimes, who has been working here for about 3 months, said that he could show the facility and answer most questions.

Inside

The building is used mostly for equipment storage. There is also a section where playground equipment is stored. Clean Comp's equipment mainly consists of forklifts and pallet jacks.

There are currently about 25 to 30 propane cylinders in the building. Mr. Grimes said that they are all empty and will be removed soon. He explained that they no longer supply their forklifts with propane cylinders because they were being stolen. He said that they only have one propane cylinder (approximately 25 pounds) that is used for moving the forklifts around. All other equipment is electrical.

There is a small work area with oil stains on the floor. There is a drill press and air compressor. Mr. Grimes said that all oil changes are performed by another company off site. He said that they do not use cutting fluids either. He mentioned that there had been a parts washer with Safety Kleen in the area, but he had it removed when he took over.

There is a metal locker with approximately 4 gallons of used paint cans and a half-full 5-gallon container of hydraulic oil. Mr. Grimes said that he did not know what it had been used for.

On a plastic cart is about 12 gallons of diesel stored in two 5-gallon and three 1-gallon gasoline cans. Mr. Grimes said that he takes them with him when he travels since he has a Mercedes that runs on diesel.

Outside

Nothing is stored outside the building.

Building 406

Date Surveyed: 9/12/97
Tenant: B&A Bodyworks and Towing (B&A)
Person Interviewed: Rich Bilafer
Interviewer: Dan Ruslen
Description: Automobile Body Work Shop

Inside

- Waste Oil: Approximately 5 gallons per month (60 gallons per year) is generated. The waste oil is stored in a 16-gallon drum in a work area by the side doors. There are oil stains on the floor under the drum.
- Paint Sludge: Approximately 35 gallons per year are generated. The mixture contains paint and thinners.
- Motor Oil: One 55-gallon drum.
- Gear Lubrication: Three 16-gallon drums. One is leaking onto the floor.
- Acetylene: Two cylinders. Each holds 65 cubic feet of gas.

Two yellow cabinets labeled "Flammables" contain mainly paints and paint thinners. Approximately 20 gallons are stored at a time. The following are also in the cabinets:

- Lacquer Thinner: Approximately 12 to 16 spray cans (contains ethyl acetate, ethyl glycol, and monobutyl ethyl acetate)
- Wheel Bearing Grease: 16 cartridges per year
- Brake Cleaner: Store 12 cans or less; use 15 cans per year (contains 1,1,1-trichloroethane)
- Citrus Degreaser: Contains "environmentally friendly" Ozzy Juice and the plastic machine holds about 7 gallons.

Outside

No chemicals or petroleum products are stored in the parking area next to the building. There are only wrecked automobiles.

Building 413

Date Surveyed: 9/11/97
Tenant: American Van Lines
Person Interviewed: Ron Jackson
Interviewer: Dan Ruslen
Description: Moving Company; building is used for furniture storage.

Inside

The building contains offices. Most of the building is used for furniture storage. The furniture is packed into "vaults" that are large (5 feet by 5 feet by 8 feet) wooden crates. There are 5 to 10 gallons of latex paint that is currently being used.

The interview was conducted with Ron Jackson. He said that the firm has three 25-pound propane cylinders to run the forklifts. Otherwise, no hazardous substances or petroleum products are stored at the facility.

Building 704

Date Surveyed: 10/20/97
Tenant: Wagner Construction Company (Wagner)
Person Interviewed: Jim Wagner
Interviewer: Dan Ruslen
Description: Maintenance Shop (construction vehicles)

Inside

In the northeast corner are four 55-gallon drums of waste oil in secondary containment. Mr. Wagner said that approximately 300 gallons of waste oil per year is used. Next to the waste oil were two 5-gallon containers of gear oil. There was oil on the floor under the one that had a nozzle connected to it. Behind the waste oil were three 5-gallon containers of grease.

The northwest corner of the building was used for storage of diesel and motor oil, containing approximately 10 5-gallon cans of diesel, 15 5-gallon containers of motor oil, and two 5-gallon containers of curing compounds. In the same area was a flammable storage locker with 1 gallon of paint thinner, 3 gallons of hydraulic oil, and a few small containers of lubricants. Mr. Wagner said that they normally have 3 to 4 gallons of antifreeze stored.

In the southwest corner of the building is one 55-gallon drum of muriatic acid and a few old batteries.

In the southeast corner of the building is a parts washer that is partially full of Safety Kleen.

In a small building adjacent to the maintenance shop, automotive parts are stored. On the shelves are nine cans (354 grams each) of battery cleaner and 10 cans (177 grams each) of starting fluid.

There are oil stains throughout the shop. The firm uses adsorbent material to sweep up oil spills. Mr. Wagner said that he was told by the Navy to put plastic under the area that is used for oil and diesel storage.

Outside

Mr. Wagner said that the firm has fuel trucks for refueling trucks and equipment at job sites. He stated that they previously had a 10,000-gallon diesel AST, but the Navy removed it from the property about 1 year ago.

Building 809

Date Surveyed: 9/12/97
Tenant: Golden Gate Railroad Museum
Person Interviewed: Mike Mangini
Interviewer: Dan Ruslen
Description: Locomotive Storage and Restoration Area

Inside

The building is mainly used for locomotive storage. The locomotive engine is sometimes maintained in the building.

The following substances are stored in the building:

- Acetylene: Three cylinders
- Kerosene: 5 gallons
- Safety Kleen: Two 30-gallon drums
- Heating Oil: 4,000 gallons inside locomotive

Mr. Mangini said that the locomotives will have very small oil leaks, but they use the Safety Kleen for cleaning up any stains.

Outside

For over 1 year, there was a 5,000-gallon AST that contained diesel. The empty tank is currently on the property, but will be removed soon, according to Mr. Mangini. A paint storage locker is present that contains approximately 15 gallons of automotive style paint and 200 gallons of latex paint.

Tracks Off Base

Date Surveyed: 9/12/97
Tenant: Golden Gate Railroad Museum
Person Interviewed: Mike Mangini
Interviewer: Dan Ruslen
Description: The railroad tracks run off the base into a residential area.

Mr. Mangini said that garbage is constantly dumped on the tracks. He said that waste motor oil is even discarded on them. According to Mr. Mangini, the City of San Francisco will occasionally clear the debris from the tracks. To his recollection, the last time the city cleared the tracks was about 6 or 7 months ago.

Currently, there is a lot of debris on the tracks. Amongst the debris, there was a 5-gallon gasoline can (presumably empty).

ATTACHMENT B2

1997 TENANT SURVEY OF HAZARDOUS SUBSTANCES STORAGE
SURVEY NOTES: J. TERZIAN, TENANT
HUNTERS POINT SHIPYARD

(37 Pages)

INTRODUCTION

The buildings leased by J. Terzian contained studios used by artists and musicians. For the survey, the person in charge of maintaining the buildings (Thomas) conducted a tour of the studios. Since access to all of the studios took more than 1 week, the fire inspector (Betty Davis) also conducted her routine safety inspections.

The artists are required to keep all flammables in metal containers. Most artists have small metal trash cans for the storage of items such as solvents. Several artists also have large metal cabinets for the storage of flammables. However, a few artists fail to comply and leave their flammables out in the open.

Most hazardous substances or petroleum products that the artists use or store are located in these metal trash cans or cabinets. Often the solvents are contained in unmarked jars and the metal cabinets are locked, making it difficult to accurately determine the substances stored in each studio.

Several items, such as paints and solvents, are commonly found in the studios. The contents of some of the items are listed as follows:

- Paint Thinner: Mineral spirits
- Acrylic Paints: Red and orange tints contain cadmium
- Developer: Water, sodium carbonate, sodium sulfite hydroquinone, p-methyl-laminophenol, and sulfate
- Workable Fixative: Acetone, hydrocarbon propellant, PGME acetate, butyl cello solve, isopropyl alcohol, and toluene
- Epoxy Sealer: Xylene, toluene, ketones, and esters
- Paint Remover: Methylene chloride and methanol
- Matte Fixative: Acetone, isopropanol, naphtha, dimethoxymethane, and petroleum gas
- Paper Cement: n-Hexane
- Matte Finish: Toluene
- Furniture Refinisher: Acetone, isopropanol, and polyethylene glycol
- Photomount Spray Adhesive: Propane and n-hexane

Access to most of the art studios was obtained for the survey. A rough estimate of the chemicals stored or used in each of the studios is provided for each building in the following pages.

PARCEL A

Building 101

Date Surveyed: 9/23-26/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team looked at each art studio)
Interviewer: Dan Ruslen
Description: Art Studios

Room 1101

- 2 gallons of acrylic paints
- 1 gallon of enamel paint
- 100 tubes of paint
- 2 gallons of solvents (in unmarked jars)
- 1 gallon of paint thinner

Room 1102

- 1 gallon of paint thinner
- 4 gallons of acrylic paints
- 50 tubes of paint

Room 1107

- 2 gallons of acrylic paints

Room 1108

- 2 gallons of paint thinner
- 30 tubes of paint
- 4 gallons of paint from tubes in piles on workbench

Room 1110

- 5 gallons of paint remover

Room 1111

Mostly stereo speakers (no chemicals)

Room 1113

- 2 gallons of paint thinner
- 1 gallon of kerosene
- 1 gallon of alcohol
- 1 gallon of lithotine (solvent)
- 2 gallons of acrylic paints

Room 1116

Small quantities (1 quart or less; 500 grams or less) of dyes, acids, and other chemicals are in a cabinet.

- 1 gallon of paint thinner

Room 1117

- 1 gallon of paint thinner
- Three cans of spray paint

Room 1118

Photography studio with a darkroom

- 5 to 10 gallons of photochemical solutions

Room 1121

- 20 tubes of paint
- 1 gallon of turpenoid
- 1 quart of stand oil

Room 1201

- 1 pint of turpentine
- 15 tubes of paint
- 2 gallons of acrylic paints

Room 1202

- 2 to 3 gallons of paint thinner
- 1 gallon of acrylic paints

Room 1203

- 2 to 3 cans of Matte Fixative
- 0.5 gallon of burnt plate oil
- 10 tubes of paint
- 1 gallon of acrylic paints
- 1 gallon of paint thinner

Room 1204

- 3 gallons acrylic paints
- 150 tubes of paint

Room 1205

- 2 gallons of paint thinner
- 5 gallons of acrylic paints

Room 1206

- 50 tubes of paint
- 1 gallon of turpenoid
- 1 gallon of paint thinner

Room 1209

K&L Electrical (no visible chemicals)

Room 1210

Sculpture auditorium and storage (no chemicals)

Room 1217

- 1 quart of paint thinner
- 1 quart of paint remover

Room 1220

White flammable storage cabinet:

- 5 gallons of kerosene
- 10 gallons of paint thinner
- Three small cylinders propane
- 1 gallon of gasoline

Room 1223

Art studio (no visible chemicals)

Room 1224

Darkroom

- 10 gallons of photochemical solutions

Room 1301

- 15 cans of spray paint
- 1 to 2 gallons of turpentine
- 30 tubes of paint

Room 1302

- 30 tubes of paint
- 1 gallon of paint thinner

Room 1303

Yellow flammable storage cabinet:

- 5 gallons of paint thinner
- 1 gallon of denatured alcohol
- 1 gallon of turpentine
- 1 gallon of lacquer thinner
- 1 quart of xylene
- 1 gallon of paint remover (methylene chloride and methanol)
- 12 gallons of oil-based paints

Room 1304

- 0.5 gallon of turpentine
- 1 gallon of acrylic paints
- 30 tubes of paint
- 1 spray can of Workable Fixative

Room 1306

- 3 to 4 gallons of epoxy hardeners
- 1 quart of naptha
- 1 quart of acetone
- 5 to 10 cans of spray paint

Room 1307

- 2 gallons of paint thinner
- 3 gallons of acrylic paints
- 15 tubes of paint

Room 1308

Storage (mainly rugs)

Room 1309

- 1 gallon of acetone
- 2 gallons of paint thinner
- 2 gallons of acrylic paint

Room 1312

- Two cans of spray Workable Fixative
- 0.5 gallon of turpentine
- 4 to 5 gallons of acrylic paint
- 40 tubes of paint

Room 1315

- 1 gallon of turpentine
- 0.5 gallon of paint thinner
- 30 tubes of paint

Room 1317

Office (no chemicals)

Room 1318

- 2 gallons of acrylic paints
- 1 quart of paint thinner

Room 1319

- 1 pint of turpenoid
- 1 gallon of acrylic paint
- 30 tubes of paint

Room 1320

- 1 gallon of paint thinner
- 1 gallon of acrylic paint

Room 1321

- Five cans of spray paint
- 0.5 gallon of paint thinner
- 1 gallon of turpenoid
- 2 gallons of acrylic paints
- 50 tubes of paint

Room 1401

- 0.5 gallon of epoxy sealer (contains amines)
- 2 gallons of surfboard resin (epoxy)
- 1 gallon of acrylic paint

Room 1402

- 1 gallon of varnish

Room 1407

- 5 gallons of carburetor and parts cleaner
- 0.5 gallon of acid plating solution
- 1 gallon of varnish stripping gel (contains gamma-butyrol acetone)

In two yellow flammable storage cabinets:

- 4 gallons of naptha
- 1 quart of methyl ethyl ketone (MEK)
- 0.5 gallon of paint thinner
- 15 gallons of lacquers and lacquer products
- 3 gallons of lacquer thinner
- 20 various aerosol cans

Room 1409

- Six cans of aerosol adhesive
- 1 gallon of turpenoid
- 2 gallons of acrylic paint

Room 1412

- 2 gallons of wood stain
- 2 gallons of turpenoid
- 1 gallon of paint thinner
- 10 gallons of acrylic paint
- 100 tubes of paint

In yellow flammable cabinet:

- 30 cans of spray paint
- 4 gallons of wood finish
- 1 gallon of furniture refinisher (contains acetone, toluene, ethylene glycol, and monobutyl ether)

- Seven cans of spray matte fixative
- 0.5 gallon of turpentine
- 1 quart of lacquer thinner

Room 1418

Painting storage

Room 1419

- 2 gallons of turpenoid
- 1 gallon paint thinner
- 10 gallons acrylic paints
- 20 tubes of paint

Room 1420

Painting storage

Room 1421

- 40 gallons of acrylic paints
- 100 tubes of paints

Room 1422

- 1 gallon of acrylic paints

Room 1423

No chemicals

Room 1501

Kitchen

Room 1508

No chemicals

Room 1510

- 1 gallon of paint thinner
- 5 gallons of acrylic paints
- 30 tubes of paints

Room 1511

No chemicals

Room 1513

No chemicals

Room 1514

- 1 gallon of paint thinner
- 2 gallons of acrylic paint
- 2 gallons of enamel paint
- 25 tubes of paint

Room 1515

- 2 gallons of Jasco paint remover
- 1 gallon of turpenoid
- 4 gallons of acrylic paint
- 100 tubes of paint
- One can of spray paint

Room 1517

- 1 gallon of paint thinner
- Five cans of spray paint
- 4 gallons of acrylic paint

Room 1518

- 1 gallon of oil-based paint

Room 1521

- 1 quart of MEK
- 1 gallon of paint thinner
- 50 tubes of paint
- 2 gallons of enamel paint

Room 1522

No key

Room 2101

- 1 gallon of paint thinner
- 2 gallons of oil-based paint
- 1 gallon of acrylic paint

Room 2102

Exhibition room (no chemicals)

Room 2103

- 12 tubes of acrylic paint (polymer emulsion)

Room 2105

- 1 gallon of acrylic paint (water-based)

Room 2106

- 2 gallons of acrylic paint
- 100 tubes of oil-based paint

Room 2107

Photography studio (no chemicals); darkroom is in Room 2109

Room 2108

Painting storage (no chemicals)

Room 2109

Contains a darkroom

- 8 gallons of photochemical solutions
- < 500 grams of sodium sulfite
- 0.67 kilogram of potassium ferricyanide

Room 2110A

- 1 gallon of sheila shine (contains petroleum distillates)

Room 2113

- 11 cans of spray fixative
- 1 gallon of paint thinner
- 1 gallon of varnish

Room 2114

- 15 gallons of acrylic paint
- 1 gallon of lacquer thinner
- 1 gallon of oil-based paint

Room 2117

- 1 gallon of paint thinner
- Two cans of spray Workable Fixative
- 20 tubes of oil-based paint

Room 2118

- Four cans of spray varnish
- 0.5 gallon of paint thinner
- 4 gallons of acrylic paint
- 40 tubes of oil-based paint
- 30 tubes of acrylic paint

Room 2120

- 20 tubes (2 ounce) of oil-based paint

Room 2121

- 1 pint of grumtine (contains D-Limonene)
- 1 gallon of turpenoid
- 100 tubes of oil-based paint

Room 2201

- 1 gallon of turpenoid
- 1 gallon of oil-based paint
- 1 gallon of acrylic paint

Room 2202

- 2 gallons of oil-based paint

Room 2206

No chemicals

Room 2207

- 0.5 gallon of turpentine
- 0.5 gallon of lacquer
- 0.5 gallon of lacquer thinner
- 3 gallons of acrylic paint

Room 2210

- 3 gallons of acrylic paint

Room 2211

Jewelry shop (no chemicals)

Room 2212

- 1 gallon of acrylic paint

Room 2213

- Five cans of spray Workable Fixative
- 50 tubes of paint

Room 2215

- 0.5 gallon of paint thinner
- 0.5 gallon denatured alcohol

Room 2216

No key

Room 2219

Exhibition studio (no chemicals)

Room 2220

Storage (no chemicals)

Room 2222

- 40 tubes of paint

Room 2223

- 0.5 gallon of acrylic paint

Room 2223A

No chemicals

Room 2301

- 4 pounds of shellac (contains methanol)
- 3 gallons of oil-based paint
- 4 gallons of paint thinner
- 2 gallons of turpentine
- One spray can of Workable Fixative
- 40 tubes of paint

Room 2304

- 1 gallon of paint thinner
- 50 tubes of paint
- 1 quart of matte varnish (acrylic polymer emulsion)

Room 2306

- 0.5 gallon of danish oil finish (contains petroleum distillates)
- Two cans of spray mount adhesive
- 1 quart of paint thinner
- 1 pint of denatured alcohol

Room 2307

- 1 gallon of oil-based paint
- 1 gallon of turpenoid
- 2 gallons of paint thinner
- 3 gallons of acrylic paint

Room 2308

Painting storage

Room 2310

- 1 gallon of paint thinner
- 0.5 gallon of acetone
- 150 tubes of paint
- 1 gallon of acrylic paint

Room 2311

No key

Room 2312

- 1 gallon of paint thinner
- 0.5 gallon turpentine

Room 2313

- 1 gallon of turpentine
- 1 gallon of paint thinner
- 60 tubes of paint

Room 2314

- Seven cans of spray acrylic coating
- 1 quart turpenoid

Room 2315

- 2 gallons of acrylic paint
- One can of spray matter finish

Room 2317

- 0.5 gallon of oil-based paint
- 0.5 gallon of turpenoid
- 0.5 gallon of paint thinner

Room 2319

- 1 gallon of turpenoid

Room 2320

No chemicals

Room 2322

- Three cans of photomount spray adhesive (10 ounces each) (contains propane and n-hexane)

Room 2323

- 0.5 gallon of turpentine
- 1 gallon of acrylic paint

Room 2324

Storage (no chemicals)

Room 2325

No key

Room 2401

Water colors only

Room 2402

- 1 gallon of turpentine
- Two cans of spray Workable Fixative

Room 2403

- 1 gallon of acrylic paint

Room 2404

No key (supposedly vacant)

Room 2406

- 1 gallon of acrylic paint

Room 2407

- One spray can of Workable Fixative
- 1 quart of acrylic paint

Room 2410

- Two cans of spray matte finish (contains toluene)
- 1 quart of paint thinner

Room 2412

- 8 gallons of enamel paint
- 1 gallon of turpenoid
- 5 to 10 gallons of acrylic paint
- 30 tubes of paint

Room 2413

- 30 gallons of acrylic paint
- 30 tubes of paint

White flammable storage locker:

- 6 gallons of turpenoid
- 1 gallon of lacquer thinner
- 2 gallons of lacquer

- 5 gallons of varnish

Room 2417

- 0.5 gallon of Turps (contains petroleum distillates)
- 30 tubes of paint

Room 2418

Painting storage

Room 2419

- One spray can of Workable Fixative
- One can of WD-40
- 1 quart of furniture refinisher (contains acetone, isopropanol, and polyethylene glycol)
- 1 gallon of paint thinner
- 1 pint of turpenoid
- 1 pint of turpentine
- 100 tubes of paint

Room 2421

- 2 gallons of paint thinner
- 5 gallons of acrylic paint

Room 2422

Furniture storage

Room 2501

- 2 gallons of turpentine
- 1 gallon of paint thinner
- 1 gallon of acrylic paint
- 50 tubes of paint

Room 2502

- 1 gallon of paint thinner
- 1 gallon of lacquer thinner

- 1 quart of turpentine
- 1 gallon of denatured alcohol
- 15 cans of spray enamel paint
- 1 gallon of varnish
- 5 gallons of enamel paint
- 20 gallons of acrylic paint

Room 2503

- One can of spray matte finish
- 1 quart of paper cement (contains n-hexane)
- One spray can of Workable Fixative
- Three cans of enamel spray paint
- 15 tubes of acrylic paint

Room 2507

- 1 gallon of paint thinner

Room 2510

- 10 gallons of acrylic paint
- 50 tubes of paint
- 2 gallons of paint thinner

Room 2511

No chemicals

Room 2513

- Three cans of propane (400 grams each)
- 2 gallons of paint thinner
- 2 gallons of varnish
- 35 gallons of acrylic paint

Room 2514

- 10 cans of spray paint
- 1 gallon of lacquer and varnish

Room 2517

- 0.5 gallon of paint thinner
- 150 tubes of paint
- 2 to 3 gallons of acrylic paint
- One can of spray adhesive

Room 2518

- 10 tubes of paint

Room 2521

Storage (no chemicals)

Room 2522

Office

Basement A

Room – No key

Basements B to S

Spaces for general storage; no chemicals in any of the areas.

Basement 303

Three rooms; two are used as art studios and one is used for art storage and exhibition. The room to the right of the stairs has two flammable storage cabinets that contain the following:

Yellow flammable storage cabinet (completely full):

- 10 gallons of wood stain
- 5 gallons of paint thinner
- 3 gallons of Dewax wax remover
- 5 gallons of oil-based finish
- 1 gallon of denatured alcohol
- 1 gallon of paste stripper

White flammable storage cabinet:

- 3 gallons of wood stain (contains < 350 grams per liter [g/L] of volatile organic compounds [VOC])

- 3 gallons of water-based stain (contains methanol, diethylene glycol, and monoethyl ether)
- 1 gallon of varnish stripping gel

The room to the left and to the back of the stairs has an old refrigerator that is used for flammable storage. The white refrigerator contains the following:

- 2 gallons of paint thinner
- 1.25 gallons of kerosene
- 1 quart of denatured alcohol

Room V11

Music studio (no chemicals)

Room V12

Music studio (no chemicals)

Room V13

Music studio (no chemicals)

Room V14

Music studio (no chemicals)

Room V21

Music studio (no chemicals)

Room V22

Cannot open lock

Room V23

Music studio (no chemicals)

Room V24

Music studio (no chemicals)

Room V31

Music studio (no chemicals)

Room V32

Cannot open combination lock

Room V33

Music studio

- One can of WD-40
- 1 gallon of oil-based paint
- One spray can of primer sealer

Room V34

Music studio (no chemicals)

Building 110

Date Surveyed: 9/22/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team looked at each art studio)
Interviewer: Dan Ruslen
Description: Art Studios

Room B1

- 4 to 5 gallons of latex paint
- 15 to 20 tubes of acrylic paint

Room B2

Frame shop

- 1 pint of turpentine

Room B3

Freezers

Room B4

Mostly kitchen and picnic (party) supplies (no chemicals)

Room B6

Kitchen storage (no chemicals)

Room B7-B8-B29

Furniture, kitchen, wood, and cardboard (no chemicals)

Room B9

Rejuvelac storage (digestion aid)

Room 101

Pottery and vases (no chemicals)

Room 102

- One can WD-40

Room 103

Kitchen (no chemicals)

Room 105

Art studio with darkroom

- Less than 500 grams hydroquinone (CAS 123-31-9)
- Photography chemicals (too dark to see what they have)

Room 110

- 50 to 75 small tubes of paint

Room 201

No key

Room 202

- 10 to 20 small tubes of paint
- 1 to 2 gallons of acrylic paint in jars

Room 203

Computers and electronic equipment (no chemicals)

Room 204

- 2 to 3 gallons of acrylic paint in jars

Room 205

- 15 gallons of latex paint
- 2 gallons of acrylic paint

Room 206

Books, records, and tapes (no chemicals)

Room 207

Vacant (only a table in the middle of the room)

Room 208

- 40 tubes of paint

Room 209A

Weaving (no chemicals)

Room 209B

- 0.5 gallon of turpenoid
- 2 gallons of paper cement (contains n-hexane)
- 10 cans of spray paint
- 20 tubes of paint

Room 210

Darkroom

- 5 to 10 gallons of photographic chemicals (developing solution, fixer, and stop bath)

Room 211

- 1 quart of acrylic paint in small jars

Room 212

Art studio (no visible chemicals)

PARCEL B

Building 103

Date Surveyed: 9/22/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team looked at each art studio)
Interviewer: Dan Ruslen
Description: Art Studios

Room 2101

- 1 gallon of acrylic paint
- 6 to 10 tubes of paint

Room 2102

Storage (no chemicals)

Room 2103

- 1 quart of paint thinner

Room 2104

- 0.5 gallon of acrylic paint

Room 2110

No chemicals

Room 2113

- 1 gallon of turpenoid

Room 2114

- 3 gallons of acrylic paint
- 50 small tubes of paint

Room 2115

Flammables are in locked gray storage cabinet

- 3 gallons of acetone

Room 2121

Storage (no chemicals)

Room 2122

- 10 to 15 gallons of acrylic paint

Room 2201

Only books (no chemicals)

Room 2202

No chemicals

Room 2203

- 1 to 2 gallons of paint thinner
- 10 cans of spray paint

Room 2204

- 1 quart of acrylic paint

Room 2205

No chemicals

Room 2206

Storage (no chemicals)

Room 2207

- 2 to 3 gallons of acrylic paint

Room 2209

- 1 to 2 gallons of acrylic paint

Room 2210

- 1 gallon of acrylic paint

Room 2211

- 2 gallons of acrylic paint
- 1 gallon of paint thinner
- 1 quart of turpentine
- 15 tubes of paint

Room 2215

- 1 gallon of turpentine
- 20 tubes of paint

Room 2217

- 0.5 gallon of turpentine
- 0.5 gallon of acrylic paint
- 40 small tubes of acrylic paint

Room 2218

- 20 tubes of paint

Room 2219

- 15 to 20 small jars (100 grams or less) of powder colorant

Room 2222

- 1 gallon of acrylic paint
- Five cans of spray paint

Building 104

Date Surveyed: 9/22/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team looked at each art studio)
Interviewer: Dan Ruslen
Description: Art Studios

Room 1101

- 1 to 2 gallons of acrylic paint

Room 1103

General storage (boxes; no chemicals)

Room 1104

- 5 to 10 gallons of acrylic paints in small jars (red and orange contain cadmium)
- Five to 10 cans of spray paint

Room 1107

- 1 gallon of acrylic paint in small jars
- 1 gallon of paint thinner

Room 1108

Contains a darkroom

- One 5-gallon drum of fixer solution
- One 5-gallon drum of developer solution
- 20 gallons of fixer and developer solutions in pint, 0.5-gallon, and gallon containers

Room 1111

Plaster and Sculpture

- 0.5 gallon of acetone

Room 1112

Plaster casting (no visible chemicals)

Room 1113

Machine shop equipment; locked green cabinet labeled "Flammable"

Room 1114

- 1 gallon of acrylic paint

Room 1115

- 3 gallons of paint thinner
- 1 gallon of denatured alcohol
- 1 small cylinder of propane

Room 1120

Art studio (no visible chemicals)

Room 1201

Office (no chemicals)

Room 1202

No chemicals

Room 1203

- 20 ounces of fiber reactive dye
- 1 gallon of paint thinner

Room 1204

- 1 gallon of acrylic paint

Room 1205

No key

Room 1206

- 1 quart of solvent (heptane based)

Room 1207

Vacant

Room 1208

- 1 quart of paint thinner

Room 1210

- Two cans of spray paint

Room 1211

- 50 small tubes of acrylic paint
- 1 gallon of acrylic paint

Room 1212

Rocks, seashells, and glass; no chemicals

Room 1213

- 1 gallon of turpenoid
- 0.5 gallon of acrylic paint

Room 1214

- 20 small tubes of paint
- 1 to 2 gallons of acrylic paint
- 1 gallon of solvent (heptane based)
- 1 to 2 gallons of unmarked solvents

Room 1215

- 0.5 gallon of acrylic paint

Building 117

Date Surveyed: 9/22-23/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team looked at each art studio)
Interviewer: Dan Ruslen
Description: Art Studios

Room 3101

Office (no chemicals)

Room 3102

- 20 tubes of paint
- 1 gallon of paint thinner
- 0.5 gallon of turpentine

Room 3103

- 50 tubes of paint
- 1 gallon of paint thinner

- 2 to 3 cans of spray Workable Fixative
- 1 gallon of acrylic paints

Room 3105

- 1 to 2 gallons of paint thinner
- 1 gallon of penetrating sealer
- 8 gallons of XTENDER (contains diethylene glycol)
- 20 liters of colorants (contains diethylene glycol)
- 5 gallons of paint (no labeled)
- 1 gallon of kerosene
- 1 gallon of lacquer thinner

Room 3110

- 15 tubes of paint
- 1 gallon of acrylic paint
- 0.5 gallon of epoxy sealer
- 0.5 gallon etching ink

Room 3114

- 10 to 12 tubes of paint
- 1 quart of turpentine

Room 3115

- 2 gallons of paint thinner
- 1 quart of turpentine
- 1 quart of lacquer thinner
- 5 gallons of paint
- 1 quart of denatured alcohol
- 40 tubes of paint

Room 3117

- 5 to 10 gallons of solvents
- 10 cans of spray paint

Room 3122

- 0.5 gallon of turpentine
- 1 quart of acetone
- 1 quart of acrylic paint
- 10 tubes of paint

Room 3214

Only contains wax for buffing

Room 3215

- 1 gallon of paint thinner
- 100 small tubes of paint

Room 3216

- 2 to 3 gallons of acrylic paint in jars
- 30 small tubes of paint
- Three to four cans of spray paint

Room 3217

- 100 small tubes of paint
- 1 gallon of turpentine

Room 3218

- Estimate 100 tubes of paint
- 4 to 5 gallons of turpentine

Room 3222

No chemicals

PARCEL D

Building 323

Date Surveyed: 10/14/97
Tenant: J. Terzian

Person Interviewed: Not applicable (Survey Team inspected the building)
Interviewer: Dan Ruslen
Description: Building is used for art activities

Inside

The southwest side of the building is used by an artist who makes large metal art pieces. He uses a cylinder (134 cubic feet) of acetylene. In a small metal flammable storage cabinet are approximately 2 gallons of paint thinner and 5 gallons of paint.

At the time of the visit an artist was working in the northeast portion of the building. He said that he normally stores less than 5 gallons of paints and solvents. He said that the artists that use the building and the adjacent building to the southeast store compressed gases in a shed in the lot between the buildings.

In the adjacent building to the southeast, the artist was using one cylinder (25 pounds) of propane and a cylinder of acetylene. In three small storage areas, there were approximately 2 gallons of solvents in quart containers, 4 gallons of oil-based paint, and 12 cans of spray paint.

Outside

In the lot between the two buildings was a shed that contained one cylinder of acetylene along with six (25 pounds each) cylinders of propane. There were also a few cylinders of compressed oxygen and argon. In a locker next to the shed were six small (approximately 1 liter) cylinders of propane.

Building 366

Date Surveyed: 9/26 and 10/14/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team inspected the building)
Interviewer: Dan Ruslen
Description: Art Studios

Inside

Several enclosed areas are used for art activities that use wood or metal. Most of the spaces are locked and not marked to differentiate the areas. During the visit on September 26, the maintenance person was not familiar with the building and had difficulty opening the locks. Therefore, only limited access was gained. A follow-up visit was conducted on October 14th to complete the survey.

To the left of the entrance to the building is a small hallway with a woodworking shop at the end (366-BH). Outside the shop was a gray flammable storage locker that contained the following:

- 3 gallons of nitrocellulose
- 5 gallons of lacquer

- 1 quart of lacquer thinner
- 1 gallon of paint remover
- 1 quart of varnish (contains acrylate monomers)

Inside the shop were the following:

- 1 quart of denatured alcohol
- 1 gallon of varnish

Next to the woodshop was a gate that led to two metal shops and an art studio. The art studio (366-GB) contained the following:

- 30 tubes of oil-based paint
- 1 quart of turpentine
- 1 gallon of primer

The closer (first) metal shop had one cylinder (150 cubic feet) of acetylene. The farther (second) metal shop also had one cylinder (150 cubic feet) of acetylene.

Just past the small hallway is another work area. The area contains the following in a gray metal cabinet:

- 3 gallons of paint thinner
- 1 gallon of lacquer thinner
- Two cans of spray matte finish
- 10 cans of spray paint
- 1 quart of denatured alcohol
- 1 quart of turpentine
- 3 gallons of oil-based paint
- 1 quart of clearcoat sealer

The next work area did not contain any chemicals or petroleum products. It appeared to be used solely for extra work space.

The third work area was not entirely closed. However, there was a locked gray cabinet that was probably used for flammable storage.

The final work area contained the following:

- One cylinder (99 cubic feet) of acetylene
- 1 quart of Jasco paint and epoxy remover
- 2 gallons of Murata acid

To the right of the entrance to the building is an area enclosed with wooden walls. The first door was the entrance to a small area that contained a Jeep. On a pallet in front of the Jeep were 13 5-

gallon cans of compressor fluid. There was a flammable storage locker that contained the following:

- 5 gallons of lacquer
- 1 gallon of lacquer sealer
- 5 gallons of lacquer thinner
- 2 gallons of brake fluid
- 1 gallon of antifreeze
- 2 gallons of polyurethane enamel

A second, smaller cabinet contained 3 gallons of turpenoid.

The second door led to three areas occupied by Bob Coffey. Mr. Coffey said that he runs a surplus business and stores various items. According to Mr. Coffey, he was in the process of vacating two of the three areas. The third area, which is the immediate space upon entering the door, contains two flammable storage lockers. He said that they contain solvents, but he is not sure exactly what solvents or what quantities there may be inside the lockers. Because heavy metal objects were piled on the floor in front of the lockers, a forklift would be required to gain access to the lockers.

The first door to the right of the entrance was locked. The maintenance person could not access the area.

Outside

In front of the building to the right of the roll-up door is an open work area that contained the following:

Small blue metal cabinet:

- 1 quart of denatured alcohol
- 1 quart of lacquer thinner
- 1 quart of adhesive cleaner (contains solvent naptha [petroleum], light aliphatic CAS 64742-89-8, xylene CAS 1330-20-7, and ethylbenzene CAS 100-41-4)
- Four cans (340 grams) of enamel spray paint
- One can of spray matte finish
- Two cans of exterior spray paint (contains xylene)
- 1 gallon of acrylic enamel paint

Large gray metal cabinet:

- 4 gallons of lacquer

The large black metal cabinet is locked with a combination lock.

Building 435

Date Surveyed: 10/14/97
Tenant: J. Terzian
Person Interviewed: Not applicable (Survey Team inspected the building)
Interviewer: Dan Ruslen
Description: Art Studios

Inside

The portion of the building leased by J. Terzian is used as an artist's workshop. One gallon of paint thinner and 1 gallon of oil-based paint were in the area.

Outside

No chemicals or petroleum products are stored outside.

APPENDIX C

SUPPORT DOCUMENTATION FOR AERIAL SURVEY ANALYSIS

(41 Pages)

Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

Prepared for

Department of Navy
Base Closure Team
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive, Building 101
San Bruno, California 94066-2402

Subcontract 5086-90-057-004, CTO 310
HLA Project No. 11400 1905

Cheryl A. Sorensen
Project Environmental Scientist

David F. Leland, P.E.
Principal Engineer

Under Contract to:
PRC Environmental Management, Inc.
135 Main Street, Suite 1800
San Francisco, California 94105

December 22, 1995

Harding Lawson Associates
Engineering and Environmental Services
105 Digital Drive, P.O. Box 6107
Novato, California 94948 - (415) 883-0112

TRANSMITTAL

To: Ms. Kim Pawlowski
PRC Environmental Management, Inc.
135 Main Street, Suite 1800
San Francisco, California 94105

From: David Leland Cheryl Sorensen for

Date: December 22, 1995

Subject: Final Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Project No.: 11400 1905

Please find enclosed 3 unbound copies of the *Aerial Photograph Review Report, Hunters Point Annex, San Francisco, California.*

If you have any questions, please feel free to call me at (415) 884-3271.

Harding Lawson Associates
Engineering and Environmental Services
105 Digital Drive, P.O. Box 6107
Novato, CA 94948 - (415) 883-0112

DFL:mh/MH43887.tm-PRC

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APPENDIX

AERIAL PHOTOGRAPHS

DISTRIBUTION

1.0 INTRODUCTION

This report was prepared by Harding Lawson Associates (HLA) under contract to PRC Environmental Management, Inc. (PRC), for the Department of Navy (Navy), Engineering Field Activities West (EFA West). The report was prepared under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62474-88-D-5086, Subcontract No. 5086-90-057-004, Contract Task Order 310 (CTO310). This report describes HLA's review of aerial photographs of Hunters Point Annex (HPA), San Francisco, California (Plate 1).

1.1 Objectives

The objectives of the aerial photograph review were to (1) document geomorphic and land use changes at HPA over time and (2) identify areas of concern (AOCs) that may indicate prior potential releases of chemicals to the environment in five aerial photographs spanning approximately 60 years (1935, 1946, 1969, 1985, and 1994).

1.2 Report Organization

The following sections include:

- Historical background regarding usage of the area now known as HPA (Section 2.0)
- A description of the methods used in the aerial photograph review (Section 3.0)
- The findings of the aerial photograph review (Section 4.0)
- A list of references cited in this report (Section 5.0).

2.0 HISTORICAL BACKGROUND

The peninsular area known as HPA (Plate 1) has undergone significant geomorphic and demographic changes from the late 1800s to the present. To provide information on historical land uses prior to the earliest available aerial photographs, this discussion mainly summarizes changes that occurred in the area before the Navy's tenure.

Prior to development by the Navy in the early 1940s, the area primarily comprised an east-to-west trending bedrock ridge that terminated on the east at San Francisco Bay at a point known as Hunters Point. The Hunters Point peninsula was approximately 6,000 feet long, with an average width of 2,000 feet. The southern and southeastern portions of the peninsula consisted of steep cliffs (as high as 170 feet); the northern and northeastern areas sloped more gently toward the bay. Land use in the Hunters Point area included ship repair facilities (within what is now Parcel B), ranching, and sparsely populated residential areas.

Bedrock at this location is primarily serpentinite, which was considered ideal for drydock construction because it was relatively easy to excavate, solid enough to support drydock foundations, and jutted into deep water. Between 1866 and 1919, three drydocks were constructed by various shipping entrepreneurs. Only Drydocks 2 and 3 remain. The land was owned by several companies during this period, including the California Steam Navigation Company, San Francisco Dry Dock Company, and Bethlehem Shipbuilding Company, Ltd. (also known as Bethlehem Steel and Union Iron Works Dry Dock) (*Dow, 1973*).

In 1940, the Navy purchased the drydocks and immediately subleased them back to Bethlehem Steel to continue operations. In 1941, the Navy officially took possession of the site under the name of Hunters Point Naval Dry Docks and began preparations for World War II. Acquisition of private land began immediately, which included lands to the west, underwater and tidal areas, and Point Avisadero. Construction of Drydock 4 was completed in 1943, after the removal of a 170-foot hillside and the excavation of approximately 5 million cubic yards of earth. Extensive infilling created the land supporting the drydock. By the end of World War II, the total estimated acreage (including under water and land property) at HPA was 979 acres (*Dow, 1973*).

In 1992, as part of ongoing remedial investigation (RI) activities, HPA was divided into five parcels (A, B, C, D, and E) comprising approximately 90, 66, 77, 128, and 135 land acres, respectively. Section 4.0 of this report summarizes the potential AOCs identified in the aerial photographs in each of these parcels, together with geomorphic changes observed between 1935 and 1994.

3.0 AERIAL PHOTOGRAPH REVIEW METHODS

The aerial photograph review was conducted in general accordance with the procedures outlined in *Fundamentals of Remote Sensing and Airphoto Interpretation (Avery and Berlin, 1992)*.

3.1 Year Selection Criteria

Stereo-pair aerial photographs from 5 years (1935, 1946, 1969, 1985, and 1994) were reviewed. The photographs were selected to cover several periods of development at HPA: pre-Navy (1935), World War II (1946), post-war (1969), Triple A Shipping's tenure (1985), and present-day tenants/remedial investigation (1994). Other factors used to select the photographs included availability, scale, quality, and stereo-pair coverage.

3.2 Scale and Grid

Stereo-pair aerial photographs were selected at a scale of 1:12,000, which correlates to a scale of approximately 1 inch equals 1,000 feet laterally on the photographs (Appendix). Because distortion occurs during both the photographing of the land surface and the reproduction of the prints (*Bomshay, 1995*), ground-truthing (and/or comparison to the base map) is recommended if distances are measured directly from the aerial photographs.

A grid system was developed to isolate areas for review. Plate 2 shows the grid superimposed on the HPA facility map. Seven vertical columns (aligned parallel to north) are defined by the capital letters A through G, and seven horizontal rows are defined by the numbers 1 through 7. Each resulting grid square has dimensions of 1,000 feet by 1,000 feet, and in turn is divided into quadrants (subcells) of equal area (500 feet x 500 feet). The subcells are designated with lower case letters (clockwise a, b, c, and d from upper middle). For example, the southeast subcell in Column B, Row 5 is designated B5c.

3.3 Identification Process

The review of the stereo-pair aerial photographs included the use of stereoscopes to evaluate whether an object has topographic relief and magnifying equipment and single photographs to approximate lateral distances for placing potential AOCs on the HPA facility maps created for each photograph (Plates 3 through 7). Some areas were not reviewed stereoscopically, depending on the stereo-pair coverage for a particular year. Each subcell was reviewed for the presence of pavement; however, identification of pavement at the scale of the photographs used in this review is difficult and subject to interpretation. In general, it was assumed that most areas were not paved in 1935. Additionally, each subcell was reviewed for its demographic status as a residential, industrial, or open area; industrial areas include commercial buildings (e.g., offices) and open areas include agricultural lands and previous developed lands left fallow. Some open areas may have been subjected to industrial operations if they were dumping grounds for industrial wastes; in other words, open areas are not pristine "open space," rather they simply do not have buildings on them.

Following a review of each subcell, potential AOCs were described and recorded in Tables 1 through 5 in accordance with the procedures presented in the following sections. If more than one AOC was encountered in a subcell, all were recorded in the tables as separate entries. The entries are listed in a clockwise fashion. For example, if a subcell contained three AOCs, the one closest to "12:00" was recorded first and the other two were listed clockwise. If part of an AOC extended into another subcell, those subcells are listed after the subcell that contained most of the AOC. Potential AOCs that corresponded geographically to Installation Restoration (IR) sites have been noted in the tables. Where AOCs were noted adjacent to several IR sites, all of the sites are listed in the tables.

3.3.1 Potential Areas of Concern

The stereo-pair aerial photographs were reviewed for indications of the potential for chemicals to be released to the environment; these indications were reported as potential AOCs. Discolorations on the ground surface indicating the release of fluids that might or might not pose a threat to the environment were recorded as potential AOCs. Similarly, areas or objects that appeared from an aerial perspective to be debris areas (of an industrial nature) or containment structures (drums, aboveground storage tanks [ASTs], etc.) were recorded as potential AOCs. This conservative approach was maintained to avoid elimination of areas that appear innocuous but in fact pose a possible threat to the environment (e.g., an AST that appears to be a water tank but which actually contains a petroleum hydrocarbon product).

Potential AOCs include, but are not limited to, the following:

- Apparent stains (may include ponded surface water)
- Drums
- ASTs
- Debris areas
- Construction areas
- Apparent filled or mounded areas
- Disturbed soil.

3.3.2 Confidence Level

Once potential AOCs were identified, a confidence rating between 1 and 5 was assigned, with 1 representing the lowest confidence that the area is a potential AOC and 5 the highest confidence level. Confidence levels, together with any specific comments regarding the AOCs, have been recorded on Tables 1 through 5.

4.0 FINDINGS

This section discusses the findings of the aerial photograph review. General geomorphic changes in the HPA area are described in Section 4.1. Sections 4.2 through 4.6 summarize apparent land uses and the AOCs identified in the aerial photographs. Tables 1 through 5 summarize the reviews of the 1935, 1946, 1969, 1985, 1994 aerial photographs, respectively. Plates 3 through 7 show the demographic status (i.e., residential, industrial, or open area) of the site and graphically portray the potential AOCs, relative to their position on the grid and the HPA facility. Parcel boundaries are shown to facilitate identification of the potential AOCs relative to known contamination at IR sites. Areas immediately outside the HPA facility border (but inside the grid) were also reviewed for the presence of potential AOCs.

4.1 Geomorphic Changes

As described in Section 2.0, the area known as Hunters Point has undergone significant geomorphic changes since the turn of the century. On the basis of the aerial photographs included in this review, the most significant changes in geomorphology occurred between 1935 and 1946. Land surface contours on the hillside changed as rock/soil was carved away. The previously sparsely populated vegetated (agricultural) hillside was transformed into a populated residential highland (Parcel A) and a heavily industrialized area in the newly filled lowland. The land mass at HPA was significantly increased by infilling of the bay. The configuration of Drydocks 2 and 3 remained unchanged and Drydock 4 and several berthing slips were constructed in the southeastern portion of the site.

Fewer geomorphic changes occurred between 1946 and 1969. The primary change occurred in the fill along the shoreline. The slough area to the southwest (in Parcel E) was filled in, leaving only a narrow channel by 1969. Several areas of the site that were unpaved in 1946 appeared to be paved by 1969, although most of the fill area along the south shore remained unpaved.

Very few geomorphic changes were observed between 1969 and 1994, and only slight variations in the shoreline are visible. The primary change is the removal of buildings onsite, especially the quonset hut housing and numerous buildings in the southeastern portion of the site (Parcels D and E). By 1994, most of the debris areas near the slough on the southwest (Parcel E) had been removed. By 1994 the dock along the shoreline northeast of Drydock 3 (Parcel B) had collapsed. Drydocks 2 and 3 had become apparently inoperative.

4.2 Potential Areas of Concern Identified in Aerial Photograph Review

4.2.1 1935

The primary land use in 1935 was agriculture, with a small amount of industry located mainly along the shoreline to the northeast (Parcels B and C) (Plate 3). Several apparent farms are present throughout the peninsula; several buildings of unknown use are also present. Only a limited number of potential AOCs were observed in the photograph; they are summarized in Table 1.

The primary areas of interest are along the northeastern shoreline near the former Bethlehem Steel Company facility. The 1935 photograph lacks the clarity of later photographs and potential AOCs were identified primarily on the basis of the presence of industrial-looking buildings and historical information. One feature (a possible fill area) was added as a potential AOC primarily because of its possible effect on site hydrogeology, rather than its potential for hazardous waste releases. A physical structure (possibly a fence or wall) in Parcel C was identified on the photograph but not included as a potential AOC. Paving is not apparent in any of the industrial areas in 1935.

4.2.2 1946

As described in Section 4.1, the land area of HPA had increased significantly by 1946. In this year, HPA consisted of industrial and to a lesser extent, residential and open areas (Plate 4). The highlands of HPA (Parcel A) primarily contained housing units, whereas the lowlands of Parcel A and Parcels B through E contained numerous areas and buildings associated with industrial activities. Open areas were observed along the southern shoreline (Parcel E); quonset huts temporarily used to house servicemen were present in the southeastern portion of Parcel E.

Potential AOCs identified in the 1946 aerial photograph include numerous apparent stains, ASTs, possible drums, and oil ponds; they are summarized in Table 2. Locations of the potential AOCs are shown on Plate 4.

4.2.3 1969

Except for the placement of a large amount of new fill in the landfill area of Parcel E and in IR-7 in Parcel B, by 1969, the land area of HPA had only slightly increased over that observed in 1946. The distribution of residential and industrial areas in 1969 is similar to that of 1946. Open space area had increased due to the addition of the fill.

Potential AOCs observed in the 1969 photograph include numerous debris areas, possible drums, ASTs, and apparent stains; potential AOCs are summarized in Table 3 and shown on Plate 5.

4.2.4 1985 and 1994

With the exception of final filling of the slough in Parcel E, no significant changes in the land surface were observed between 1969 and the 1994. The residential, industrial, and open areas remained relatively the same, with the following exceptions:

- Quonset hut housing along the southern shoreline had been removed by 1985
- Apparent barracks in Parcel A had been removed by 1985, leaving only building foundations
- There appear to be fewer of the debris areas that were observed in open areas in the 1969 photograph (some are possibly covered by vegetation).

Potential AOCs observed in the 1985 and 1994 photos include debris areas, possible drums, ASTs, stains, and fill areas; potential AOCs are summarized in Tables 4 and 5, respectively. Potential AOC locations for 1985 and 1994 are shown on Plates 6 and 7, respectively.

5.0 REFERENCES

Avery, T.E., and G.L. Berlin, 1992. *Fundamentals of Remote Sensing and Airphoto Interpretation.* MacMillan Publishing Company.

Bomshay, Rebecca, 1995. Telephone conversation between Rebecca Bomshay, Pacific Aerial Photographs, Oakland, California, and Tina Hariu, Harding Lawson Associates. October.

Dow, G.R., 1973. *Bay Fill in San Francisco: A History of Change.* Masters Thesis, California State University, San Francisco, California. July.

TABLES

Table 1. Summary of Aerial Photograph Review, 1935
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
B 3 a		X		U	I	ASTs	3	Possibly water tanks	None; offsite
C 2 d		X		U	O	Small building with possible adjacent tank	3	None	None; offsite
D 1 c D 2 b	X		A	U	I	Possible industrial area	3	None	None
D 2 a	X		A	U	I	Possible AST	2	Circular object; possibly farm related	None
E 2 a E 2 d	X		B	U	I	Possible industrial area	3	None	IR-31
E 2 c	X		B	U	I/O	Possible industrial area	3	None	IR-6
E 3 a E 3 b	X		A	U	O	Possible industrial area	3	None	None
F 3 b	X		C	U	O	Possible fill sand deposits on southwest side of grid	4	Structure in southwest corner	IR-28
G 2 c G 2 d	X		C	P/U	I	Drydock and support buildings/fill area	5/5	Unidentifiable objects	IR-28
G 3 a G 3 b G 2 c G 2 d	X		C	U	O	Fill area	5	None	IR-28

P Paved.
U Unpaved.
R Residential.
I Industrial.
O Open area.
* Offsite refers to land areas only. Offshore areas are not noted.
† Confidence levels follow the description in the previous column. The rating scale is from 1 to 5 with 1 being the lowest level and 5 being the highest.

Table 2. Summary of Aerial Photograph Review, 1946
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid			Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
A	3	a		X		P	I	Debris in enclosed industrial area; stains; ASTs	4	None	None; offsite
B	3	a		X		P	I	Possible ASTs (2)/stained ground surface around enclosed industrial area	3	Adjacent to former building in industrial area immediately outside site	None; offsite
BBBCC	55455	bccad	X		E	U	O	Possible fill area	3	Disturbed soil along shoreline	IR-2
C	4	a	X		E	U	O	Possible fill pile	2	Debris is orderly but unidentifiable	None
CC	44	ab	X		E	P	I	Debris area along railroad tracks	4	Debris is orderly but unidentifiable	IR-4
CCC	444	abd	X		E	P/U	I	Enclosed heavily stained industrial area	5	Unidentifiable debris	IR-12
CC	44	ad	X		E	U	I/O	Debris	4	None	Partially within IR-12
CC	44	cb	X		DE	U	I	Debris	4	Debris is orderly but unidentifiable	IR-5 and IR-36
CD	55	ba	X		D	U	I	Possible stains at debris	2	Debris is orderly but unidentifiable	None
DD	22	ad	X		A	P/U	I	Stains, possible tanks, debris	3	Area appears slightly industrial; unknown activities	None
D	3	b	X		A	U	R	AST	5	Water tank	IR-43
D	3	c	X		D	U	I	Possible AST	4	Appears to be large capacity AST	None
DDD	434	adb	X		ADE	U	I	Possible stains at debris	3	Dark area on north side of building; abundant debris along perimeter of building	Partially within IR-36
DD	54	ad	X		D	U	I	Stain	3	No apparent source	IR-36
D	5	a	X		D	U	I	Possible drums	2	No stains noted	IR-36
DD	54	bc	X		D	U	I	Possible stains at debris	3	Debris unidentifiable	None
D	5	b	X		D	U	I	Dark stains in enclosed industrial area	4	Debris present	None
DD	56	da	X		DE	U	I/O	Stains at equipment	3	Debris is orderly but unidentifiable	IR-13 and IR-39

Table 2. Summary of Aerial Photograph Review, 1946
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid			Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
DD	66	ab	X		E	U	O	Very dark stains	5	Shoreline oil reclamation ponds	IR-3
EE	12	cb	X		B	U	I	Stains at debris around building	4	Unidentifiable debris, may contain drums	IR-24
E	1	d	X		B	U	I	Large black stain along road	2	Possibly water	None
E	2	b	X		B	P	I	ASTs	5	Acid Mixing Plant	IR-24
E	2	c	X		A B	U	I/O	ASTs	5	Tank farm	IR-6
E	3	b	X		C	P	I	Stain around building	4	None	IR-30
E	3	b	X		C	P	I	ASTs (3)	5	None	None
EEF	344	cba	X		C	P/U	I	Stains at drydock/possible drums	3/1	Ship being serviced in drydock	IR-57
E	4	a	X		D	U	I	Stains/possible AST	4/2	None	Partially within IR-33
EE	44	cb	X		D	U	I	Appears industrial	2	Debris is orderly, most likely equipment	IR-22 and IR-35
E	5	a	X		D	P	I	Stains at debris area	5	Disordered unidentifiable debris	PA-44
E	5	a	X		D	U	I	Stains at equipment	3	Orderly equipment	None
EEEE	5555	cbda	X		D	U	I	Stained area at equipment	2	Possibly water	None
EE	77	ba	X		E	U	O	Very dark stain and debris	4	Possible drums and fill area along shoreline	IR-2
F	1	d	X		B	P	I	Piers heavily stained	3	Possibly water	IR-24
FF	11	dc	X		B	P	I	Piers heavily stained	3	Possibly water	None
F	2	a	X		B	P	I	Stains	3	None	IR-24
F	2	a	X		B	U	I	Dark stains at debris	5	Debris unidentifiable	IR-20 and IR-24
FE	33	ab	X		C	P	I	Stains at debris	4	Debris unidentifiable	Extends into IR-58
F	3	c	X		C	U	I	Possible drums/stains at debris	2/4	None	None

Table 2. Summary of Aerial Photograph Review, 1946
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid			Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
F	6	b	X		D	P	I	Possible ASTs	2	None	None
GF	22	ab	X		B	P	I	Dark stains at debris around building	4	None	IR-26
G	2	c	X		C	P	I	Stains at debris area	3	Unidentifiable debris	Partially within IR-28
G	2	d	X		C	P	I	Possible AST	2	None	None
GG	33	ad	X		C	U	I	Disturbed soil	2	Possible fill area or building foundation	IR-28
G	3	b	X		C	U	I	Stains at debris	3	Unidentifiable debris	IR-28
G	3	b	X		C	P	I	Stains at debris	3	Unidentifiable debris	None
G	6	a	X		D	P	I	Stains	3	None	None

P Paved.

U Unpaved.

R Residential.

I Industrial.

O Open area.

* Offsite refers to land areas only. Offshore areas are not noted.

† Confidence levels follow the description in the previous column. The rating scale is from 1 to 5 with 1 being the lowest level and 5 being the highest.

Table 3. Summary of Aerial Photograph Review, 1969
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
A 3 b		X		P/U	I/O	AST	3	Large industrial complex, possible AST in courtyard between two buildings	None; offsite
A 3 c		X		U	I/O	Stains in enclosed industrial area	4	None	None; offsite
A 3 d A 3 c		X		U	I/O	Stains in enclosed industrial area	4	None	None; offsite
A 4 b	X		E	U	O	Debris along shoreline	3	None	IR-1
A 4 d	X		E	U	O	Debris along shoreline	3	None	IR-1
B 1 b B 1 c		X		U	I	Boat yard	5	Possible fill area	None; offsite
B 4 a B 3 d	X		E	U	O	Fill and debris	4	At slough	IR-1
B 4 b	X		E	U	O	Circular stain	3	Vehicle tracks leading from dark area	IR-1
B 4 c	X		E	U	O	Debris area	5	None	Partially within IR-1
B 5 b	X		E	U	O	Possible stain near debris	4	None	IR-2
C 1 a C 1 b		X		U	O	Debris with fill	3	Bay, docks, boats	None
C 3 b	X		A	P	O	Bunker	5	Unknown contents	None
C 4 a	X		E	U	I	Drums, dark stained surface	2	None	None
C 4 b C 4 a	X		E	U	I	Stained enclosed industrial area	5	None	IR-4
C 4 c C 4 d C 5 a C 5 b	X		E	U	I	Possible drums/stains	4/5	Surface debris, dark area on soil	None
C 4 d	X		E	U	I	Possible drums and stains/sandblast piles	4	Box cars, surface debris, dark area on soil	IR-12
C 5 b C 5 c	X		D	U	I	Stained surface near debris area	3	Several dark areas	IR-36
C 5 c	X		E	U	O	Stain at automobiles	5	None	IR-2
D 1 a D 1 d	X	X	B	U	O	Fill and debris	3	None	None; offsite IR-7
D 3 b	X		A	U	R	AST	5	Water tank	IR-43
D 5 b D 4 c	X		D	U	I	Stains and debris	5	None	None

Table 3. Summary of Aerial Photograph Review, 1969
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
D 6 a D 6 d	X		E	U	O	Dark stains	5	Shoreline oil reclamation ponds	IR-3
E 1 a	X		B	U	I	AST	4	None	IR-23
E 1 c F 1 d	X		B	P	I	AST/drums	4/2	None	IR-24
E 1 d	X		B	P	I	Stains at debris pile	3	None	None
E 2 b	X		B	P	I	ASTs	5	Acid Mixing Plant	IR-24
E 2 c	X		B	P/U	I	Tank farm	5	None	IR-6
E 3 c	X		C	P	I	ASTs	4	Cylindrical object(s) near drydock, may have stored sandblast grit	IR-57
E 4 b	X		D	P	I	Possible stains at debris	3	None	IR-57
E 5 b E 5 c	X		D	P	I	Possible ASTs/drums/stains	4/1/3	None	None
E 6 a	X		E	P	I	Possible fuel tank(s)	5	None	None
E 6 d	X		E	U	I	AST	5	Tank S-505	IR-2
F 2 a	X		B	P	I	Large stain in debris area	3	Around building	IR-20 and IR-24
F 2 c	X		B	P	I	Possible ASTs	3	Cylindrical objects near drydock; may have stored sandblast grit	IR-26
F 2 c	X		B	P	I	Possible ASTs	3	Cylindrical objects near drydock; may have stored sandblast grit	None
F 3 a	X		C	P	I	Stain	2	Darkened surface in debris or storage area	IR-28
F 3 d	X		C	U	I	Debris area	4	None	IR-29
F 3 d	X		C	P	I	Stains	3	Possibly water	IR-29
F 4 a	X		C	P	I	Possible ASTs	2	Cylindrical objects dockside, no stains observed	IR-57
F 5 d F 6 a	X		D	P	I	Stains	3	Darkened area near edge of dock	None
F 6 a F 6 d	X		D	P	I	Possible drums	2	Debris	None
F 6 b F 5 c	X		D	P	I	AST, tall cylindrical object under crane	2/2	No signs of leakage	None
G 3 b	X		C	P	I	Stains/drums	3/5	In storage yard with other debris	IR-28

Table 3. Summary of Aerial Photograph Review, 1969
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
G 3 d	X		C	P	I	Possible ASTs	3	West of building	None

P Paved.

U Unpaved.

R Residential.

I Industrial.

O Open area.

* Offsite refers to land areas only. Offshore areas are not noted.

† Confidence levels follow the description in the previous column. The rating scale is from 1 to 5 with 1 being the lowest level and 5 being the highes

Table 4. Summary of Aerial Photograph Review, 1985
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
A 3 a		X		P	I	Debris in enclosed industrial area	4	Unorganized surface storage	None; offsite
A 3 b	X		A	P	I	Stains	5	Stains alongside railroad tracks, possibly water	None
A 3 b A 3 c		X		P	I	AST, scrap yard, stains	5	Area cluttered with debris, tank oriented NW to SE and stained area with trucks, boat in yard	None; offsite
A 3 c		X		U	I	Dark stain	4	Appears surrounded by a berm	None; offsite
A 3 d A 4 a		X		P/U	I	AST, scrap yard	4	Miscellaneous debris, cars	None; offsite
A 4 a A 4 d	X		E	U	O	Drums	4	Drums aligned parallel to beach; no visible stain	IR-1
A 4 b B 4 a	X		E	U	O	Miscellaneous debris	3	Possible rip-rap	IR-1
B 1 b		X		P	I	Boat yard	5	None	None; offsite
B 3 a	X		A	P	I	Possible drum area	3	Small area at edge of parking area	PA-41
B 4 d B 4 a	X		E	U	O	Miscellaneous debris	3	Possible rip-rap	IR-1
B 5 b	X		E	U	O	Possible stain at miscellaneous material storage	3	None	IR-2
B 5 c B 5 b	X		E	U	O	Debris along shoreline	4	None	IR-2
C 1 a C 1 b		X		U	O	Debris, circular fill area	3	Along shore to west	None; offsite
C 3 c	X		A	P/U	I	Possible stain at debris storage	4	None	None
C 3 d	X		A E	P/U	I	Stain along railroad tracks	4	None	IR-56
C 4 a C 4 b	X		E	P/U	I	Stained industrial area	5	Heavy staining associated with debris scattered throughout enclosed area	IR-4
C 4 b	X		D	U	I	Possible stain adjacent to building	3	None	IR-36
C 4 c C 4 b D 4 d	X		D	U	I	Possible stain adjacent to fenced storage	3	Known transformer storage	IR-36

Table 4. Summary of Aerial Photograph Review, 1985
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
C 4 c	X		E	U	I	Possible stains	3	None	IR-5
C 4 d	X		E	P	I	Possible stains/storage yard	3	May be water	IR-12
C 4 d	X		E	U	O	Possible stains	3	None	None
C 5 b C 5 c D 5 d	X		D	U	I	Abundant staining	4	Miscellaneous storage, possible AST, pipe	IR-36 and IR-39
C 5 d	X		E	U	O	Apparent stain in large circular pattern	4	Between backstop and Building 600	IR-2
C 6 a	X		E	U	O	Pistol range	5	None	IR-2
C 6 b C 6 a D 6 a D 6 c E 6 d	X		E	U	O	Debris along shoreline/very dark stains	4/5	None/Shoreline Oil Reclamation Ponds	IR-2/IR-3
D 1 c	X		B	P	I	Possible stain	3	None	None
D 3 a D 3 d	X		A	P/U	O	Bunker, possible stains at debris	3	Miscellaneous storage	None
D 3 b	X		A	U	R	AST	5	Water tank	IR-43
D 4 a	X		D	P	I	Two large stains on east side of buildings	4	Possibly water	IR-36
D 4 c	X		D	P	I	Stains at debris	4	Possible storage area	None
D 4 d	X		D	U	I	Stains in enclosed area	3	Possible sandblast piles	IR-36
D 5 d	X		E	U	O	Possible drums on building pad	3	None	IR-39
E 1 c	X		B	P	I	Staining on pavement near drums	3	Drums stored next to drydock	None
E 1 c	X		B	P	I	Stains	4	North corner of Building 128	IR-24
E 1 d D 1 c	X		B	P/U	I/O	Stains	3	Possibly new pavement	IR-7 and IR-23
E 2 b E 1 c	X		B	U	I	Trailers, ASTs, storage area	3	Possible tanker	IR-24
E 2 c	X		B	U	I	ASTs	5	Tank farm	IR-6
E 3 b	X		C	U	I	Stains	1/3	Between buildings	IR-29 and IR-30
E 3 c	X		C	P/U	I	Possible stains adjacent to ASTs	3	None	IR-57

Table 4. Summary of Aerial Photograph Review, 1985
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
E 3 c E 4 b F 4 a	X		C	P/U	I	Debris and stains along drydock	3	None	IR-57
E 4 b E 4 c	X		D	P	I	Possible stains	3	Miscellaneous debris is orderly, most likely equipment	IR-35
E 4 c E 5 a E 5 b	X		D	U	I	Miscellaneous debris storage with stains	4	None	None
E 5 b	X		D	P/U	I	Miscellaneous debris storage with stains	4	None	IR-32
E 5 b E 5 a E 5 c	X		D	U	O	Miscellaneous debris storage with stains	4	None	None
E 5 c E 5 d E 6 b F 5 d	X		D	U	I/O	Possible staining	3	Ordered miscellaneous debris, storage adjacent to pier	None
E 6 a	X		E	U	O	Large storage containers	4	None	None
E 6 a E 6 d	X		E	U	O	Large storage containers	4	None	Partially within IR-14 and PA-54
E 6 d E 6 c	X		E	U	O	Large storage containers	4	None	None
E 6 d	X		E	U	I	AST	5	Tank S-505	IR-2
E 7 a E 7 b	X		E	U	O	Lumber storage	4	None	IR-2
F 1 a F 1 d	X		B	P	I	Piers heavily stained	3	Possibly water	None
F 1 d F 2 a	X		B	P	I	Possible stain	3	Possibly water	IR-24
F 2 a	X		B	P	I	Dark stains at debris/possible drums	5/4	Debris unidentifiable/drums west side of building	IR-20
F 2 b	X		B	U	I	Debris at shoreline	4	Possible riprap	IR-26
F 2 b	X		B	P	I	Dark stains at debris around building	4	Possible drums south of Building 157	IR-26
F 2 c F 2 a F 2 b F 2 d	X		B	P	I	Debris on dock	4	None	Partially within IR-26
F 2 d	X		BC	P	I	Possible drums	2	No stains noted; possible sandblast pile north of building	None

Table 4. Summary of Aerial Photograph Review, 1985
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
F 3 a	X		C	P	I	Dark stain at building	5	None	IR-28
F 3 c F 3 b	X		C	P	I	Stains at debris, miscellaneous storage/debris between buildings	4	None	IR-28
F 3 d F 3 c F 4 a F 4 b	X		C	P	I	Stains	5	West and south of building	Partially within IR-28 and IR-29
F 4 a	X		C	U	I	Small stains near dry-dock	3	Possibly water/drums and ASTs along drydock	IR-57
F 6 b F 6 d	X		D	P	I	Possible staining at end of piers	3	None	None
G 2 a	X		B	P/U	I	Debris storage along shoreline	3	None	IR-26
G 3 b	X		C	P	I	Stains at debris	4	Unidentifiable debris	IR-28
G 3 c	X		C	P	I	Miscellaneous storage near dock	3	None	None
G 3 d	X		C	P	I	Staining west of building	4	None	None

P Paved.
U Unpaved.
R Residential.
I Industrial.
O Open area.
* Offsite refers to land areas only. Offshore areas are not noted.
† Confidence levels follow the description in the previous column. The rating scale is from 1 to 5 with 1 being the lowest level and 5 being the highest.

Table 5. Summary of Aerial Photograph Review, 1994
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
A 3 a		X		P	I	Debris, autos in enclosed area	3	None	None; offsite
A 3 b A 3 c	X	X	E	P/U	I	Debris and stains in enclosed area	3	Unorganized surface storage	IR-1
A 3 d A 3 c		X		P/U	I	AST tank pad	5	Checked previous years; 2 large, 2 medium, and 5+ small ASTs present at pad	None; offsite
A 4 a		X		U	I	Mounded fill or soil	N/A	Use of fill or mounded soil not apparent	None; offsite
A 4 b	X		E	U	O	Debris along shoreline	3	None	IR-1
A 4 d	X		E	U	O	Small debris	3	Possible drums	IR-1
B 1 a B 1 b		X		P/U	I	Possible auto wrecking yard	3	None	None; offsite
B 1 b		X		P	I	Boat yard	5	None	None; offsite
B 2 a		X		U	R	Stain	3	Located at end of cul-de-sac	None; offsite
B 4 c B 4 d B 5 a B 5 b	X		E	U	O	Debris	3	Small debris at shoreline	IR-1 and IR-2
C 1 a		X		U	O	Debris with fill	3	Along shore to west	None; offsite
C 1 b		X		U	O	Circular fill area	2	None	None; offsite
C 1 c D 1 d		X		U	O	Fill area	3	None	None; offsite
C 3 c	X		A	P	I	Possible drums; stain	2	Small objects in yard	None
C 3 d B 3 c	X		E	P/U	I	Stained ground; debris	4	Auto storage/ wrecking yard	IR-56
C 4 c C 4 b	X		D	U	O	Debris area	3	Possible debris area	IR-36
C 4 d	X		E	U	O	Possible AST	2	None	IR-12
C 5 b C 5 c D 5 a D 5 d	X		D	P/U	O	Stains at miscellaneous debris and equipment	4	Construction yard	IR-36 and IR-39
C 5 d	X		E	U	O	Stain	3	Dark circular feature in field	IR-2
D 3 a	X		A	P	I/O	Bunker	5	Unknown contents	None
D 3 b	X		A	U	R	AST	4	Water tank	IR-43
D 3 c	X		A	U	I/O	Stain in parking lot	3	None	None
D 4 a D 4 b	X		D	U	I	Stains within enclosed area with possible AST	5	None	IR-37

Table 5. Summary of Aerial Photograph Review, 1994
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

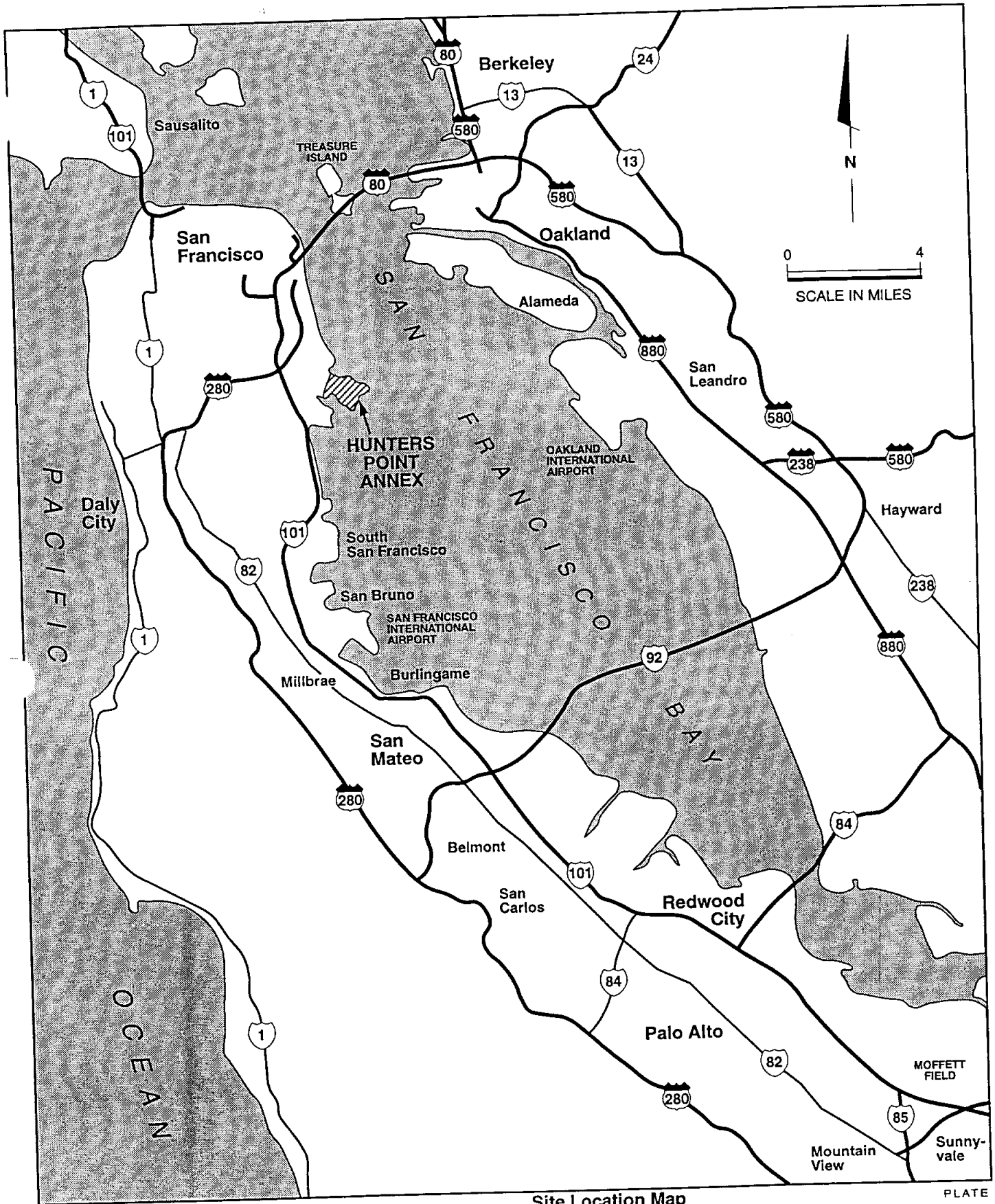
Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
D 4 b	X		D	U	I	Stains inside enclosed industrial area	5	Pickling and Plate Yard	IR-9
D 4 c	X		D	U	I	Stains/debris	4	Possible storage area	Partially within IR-36
D 4 d	X		D	U	I	Stained soil, possible fill	3	Dark, hummocky area in yard corner	IR-36
D 6 a D 6 b D 6 c D 6 d	X		E	U	O	Dark stains	5	Shoreline oil reclamation ponds	IR-2 and IR-3
E 1 d	X		B	P	I	Stains at debris pile	4	Dark area on pavement	None
E 2 b	X		B	P	I	Debris pile	4	None	IR-24
E 3 b E 3 c	X		C	P	I	Disturbed ground, debris, darkened pavement	4	None	None
E 3 d E 3 a	X		A	U	O	Disturbed soil	3	None	None
E 4 a E 4 b E 3 c	X		D	P	I	AST/debris and stains	5	Adjacent to drydock	IR-35 and IR-57
E 4 a	X		D	P	I	Stain west side of building	3	None	None
E 4 c	X		D	U	O	Stain/ASTs/debris	4	Darkened surface, possible vegetation/circular objects next to street	IR-35
E 4 c E 4 d	X		D	P	I	Debris and stains	3	Darkened area adjacent to building	None
E 5 a E 5 c E 5 d	X		D	U	O	Possible fill area	3	Linear features, possible backfilled trenches	None
E 5 b E 5 c	X		D	U	O	Construction yard/disposal area with possible drums	3/2	Scattered debris on surface/small circular objects to south	None
E 6 a	X		E	U	O	AST	4	Possible temporary ASTs	IR-15 and IR-14
E 6 b	X		BE	U	I	Staining at debris	3	None	None
E 6 c	X		E	U	O	Gravel stockpiles	4	Apparent clean fill	IR-2
E 6 d	X		E	U	I	Containment berm	5	Former Tank S-505 location	IR-2
E 7 a E 7 b	X		E	U	O	Large mound	3	Debris mound, gravel	IR-2
F 2 a	X		B	P	I	Possible AST	3	No staining observed	IR-20
F 2 b	X		B	P	I	Stains	3/5	Small dark area adjacent to building/dark area at NE corner of Building 157	IR-26

Table 5. Summary of Aerial Photograph Review, 1994
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Grid	Onsite	Offsite*	Parcel	P/U	R/I/O	Potential Areas of Concern Identified	Confidence Level (1 to 5)†	Comments	IR or PA Site Containing Potential Area of Concern
F 2 c	X		C	P	I	Stain at debris	3	Between drydocks; possible darkened foundation remnant	None
F 3 a F 3 b F 2 d	X		C	P	I	ASTs/debris and stains	2/4	3 white fences/possible temp. ASTs	IR-58
F 3 c	X		C	P	I	Stains and debris	4	Darkened area between buildings	IR-28
F 3 d	X		C	P	I	Stains	4	Darkened area between buildings	IR-29
F 4 a	X		C	P	I	AST	5	Possibly water tank, white circular object	IR-57
F 4 d	X		C	P	I	Stain	3	Small dark area near drydock	IR-57
F 5 a	X		D	P	I	Stain	3	Dark square area, small, associated with objects on surface	PA-32
F 5 b	X		D	P	I	Stain	2	Dark feature near end of pier	None
F 5 c	X		D	P	I	Possible AST	3	None	IR-32
F 5 d E 5 c	X		D	P	I	Stain	2	Dark irregular-shaded feature, soil/debris on paved surface	PA-32
F 6 b	X		D	P	I	Possible stains adjacent to square structure	3	Unidentifiable structure	None
F 6 d	X		D	P	I	Drums/debris	4/4	Debris pile, drums at water's edge	IR-17
G 2 a	X		B	P	I	Debris pile	4	At end of pier	IR-26
G 3 b	X		C	P	I	Stains	3	Small dark areas southwest of Building 219	IR-28
G 3 d	X		C	P	I	Possible stain	3	Surface storage/debris (including propellers)	IR-28
G 6 a	X	X	C	P/U	I	Debris pile, possible tanks	3	At corner of pier	None

P Paved.
U Unpaved.
R Residential.
I Industrial.
O Open area.
* Offsite refers to land areas only. Offshore areas are not noted.
† Confidence levels follow the description in the previous column. The rating scale is from 1 to 5 with 1 being the lowest level and 5 being the highest.

PLATES



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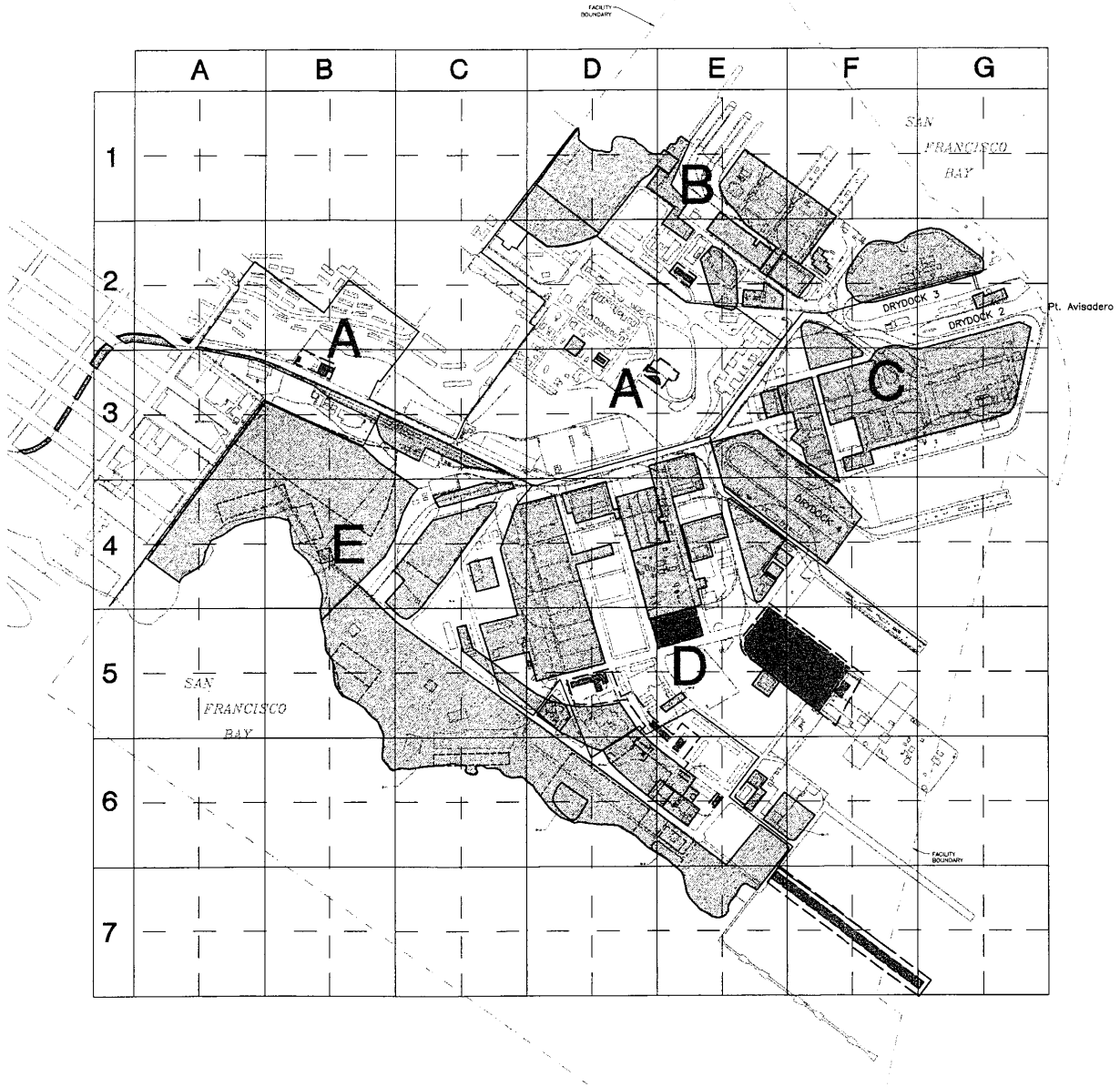
Engineering and Environmental Services

Site Location Map
Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

PLATE **1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
LFDc	11400 1905	CAS	11/95	



N

EXPLANATION:

A
1 a b c d

GRID SUBCELL DESIGNATIONS

EXISTING IR SITE

BUILDING OR AREA IDENTIFIED FOR INVESTIGATION WITHIN A PA SITE

EXISTING BUILDING

LOCATION OF FORMER BUILDING

PARCEL BOUNDARY

IR SITE BOUNDARY

PA SITE BOUNDARY

TRIPLE A SITE BOUNDARY

CRANE OR RAILROAD TRACKS

FENCE

ROADWAY

400 0 400 800

SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHK
A	02/09		CSN	

DRAWN: CSN
ENGINEER:
CHECKED:
DATE:

PROJECT NO: 11400.1905
SCALE: 1"=400'
APPROVED: CHS
DATE: 12/22/95

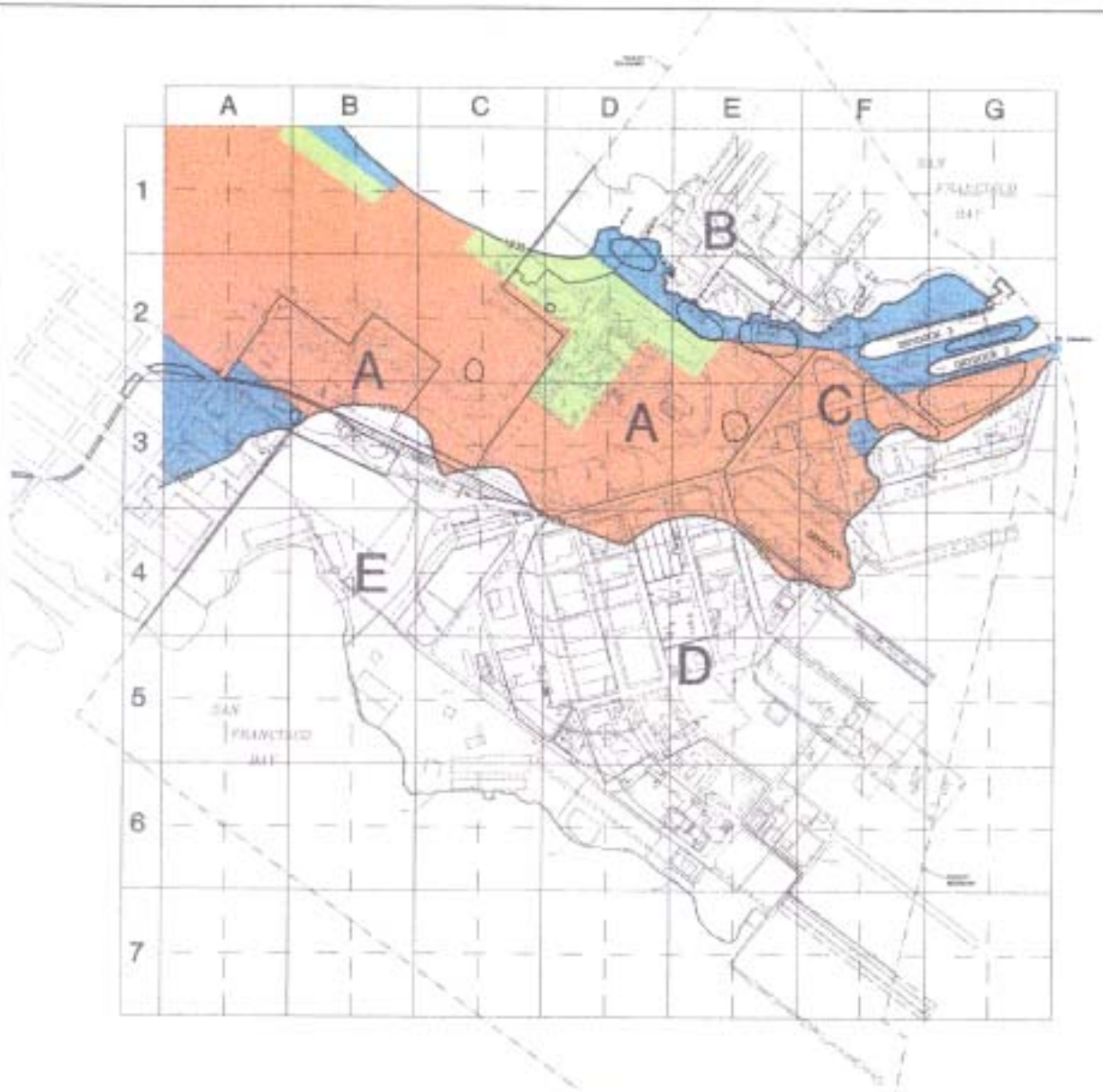
Harding Lawson Associates
Engineering and Environmental Services
105 Digital Drive
Novato, California 94949
Phone: (415) 883-0112

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
San Bruno, California
ENGINEERING FIELD ACTIVITY WEST

Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

HPA FACILITY MAP SHOWING GRID

PLATE 2
SHEET: 1 of 1
REVISION NUMBER:
DATE: 11/95



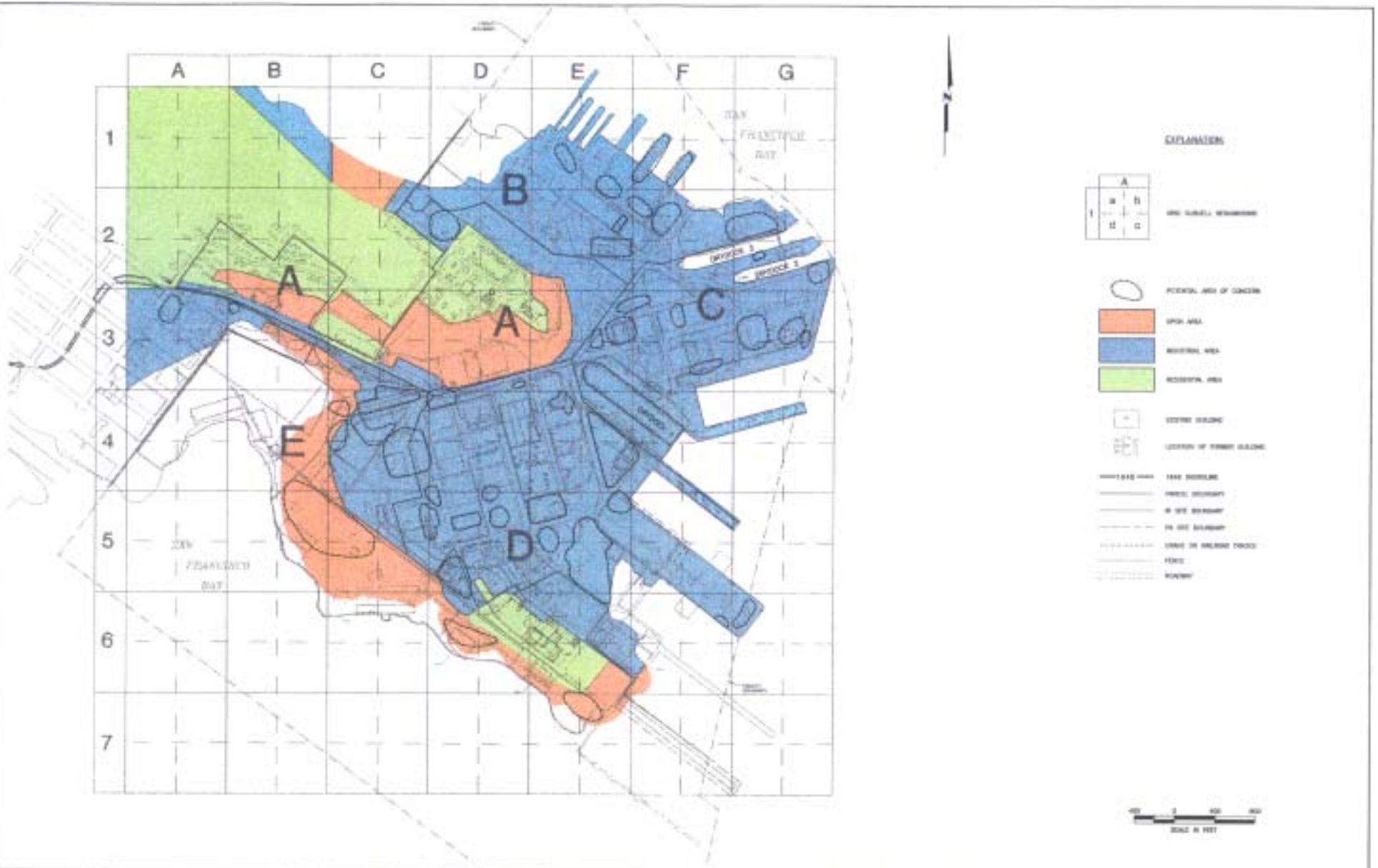
EXPLANATION

Harding Lawson Associates
Engineering and Environmental Services

ENGINEERING FIELD ACTIVITY WEST
Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

POTENTIAL AREAS OF CONCERN IDENTIFIED IN 1935 AERIAL PHOTOGRAPH

SCALE IN FEET



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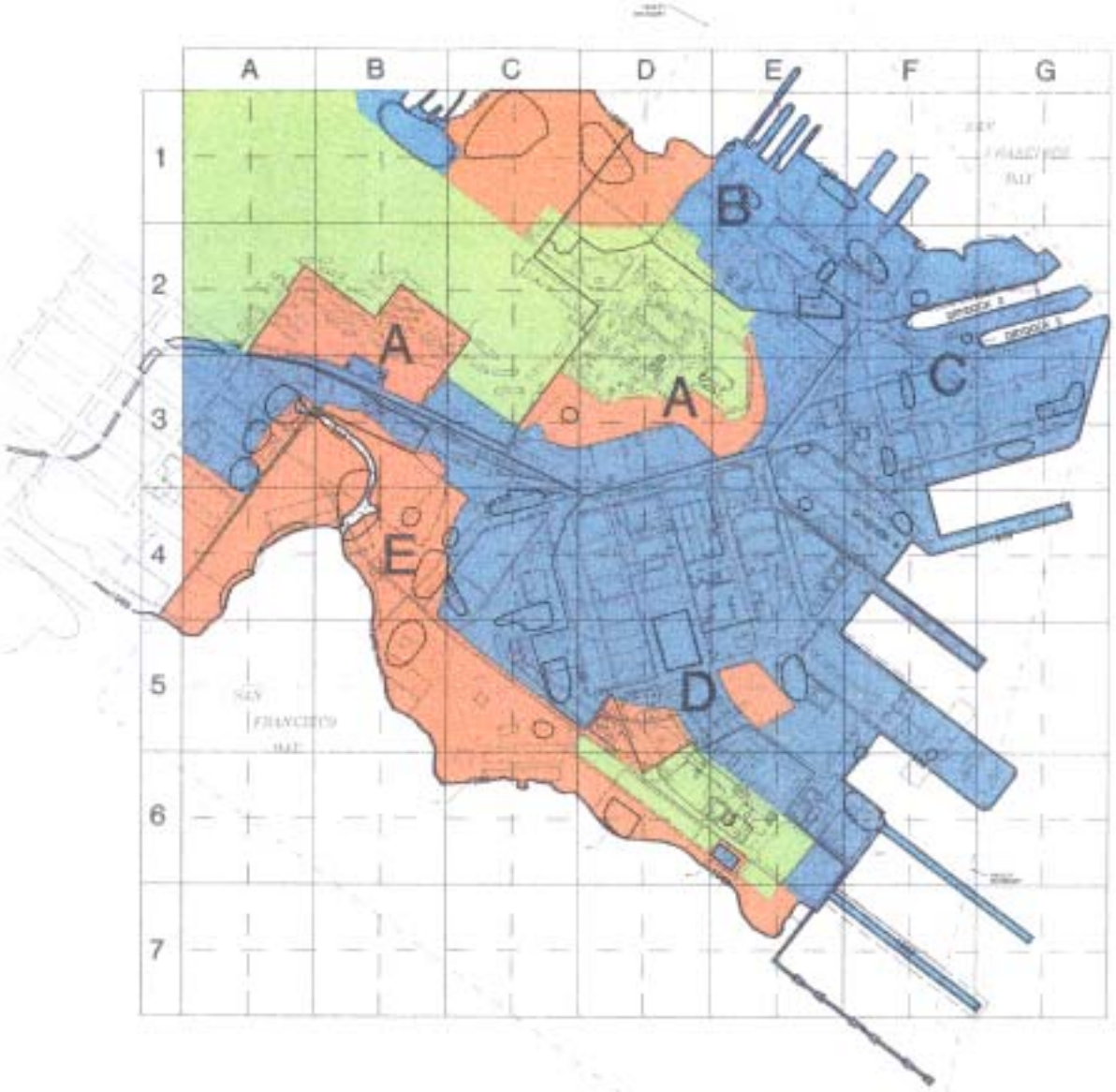
ENGINEERING FIELD ACTIVITY WEST
Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

POTENTIAL AREAS OF CONCERN IDENTIFIED IN 1946 AERIAL PHOTOGRAPH

PLATE 4



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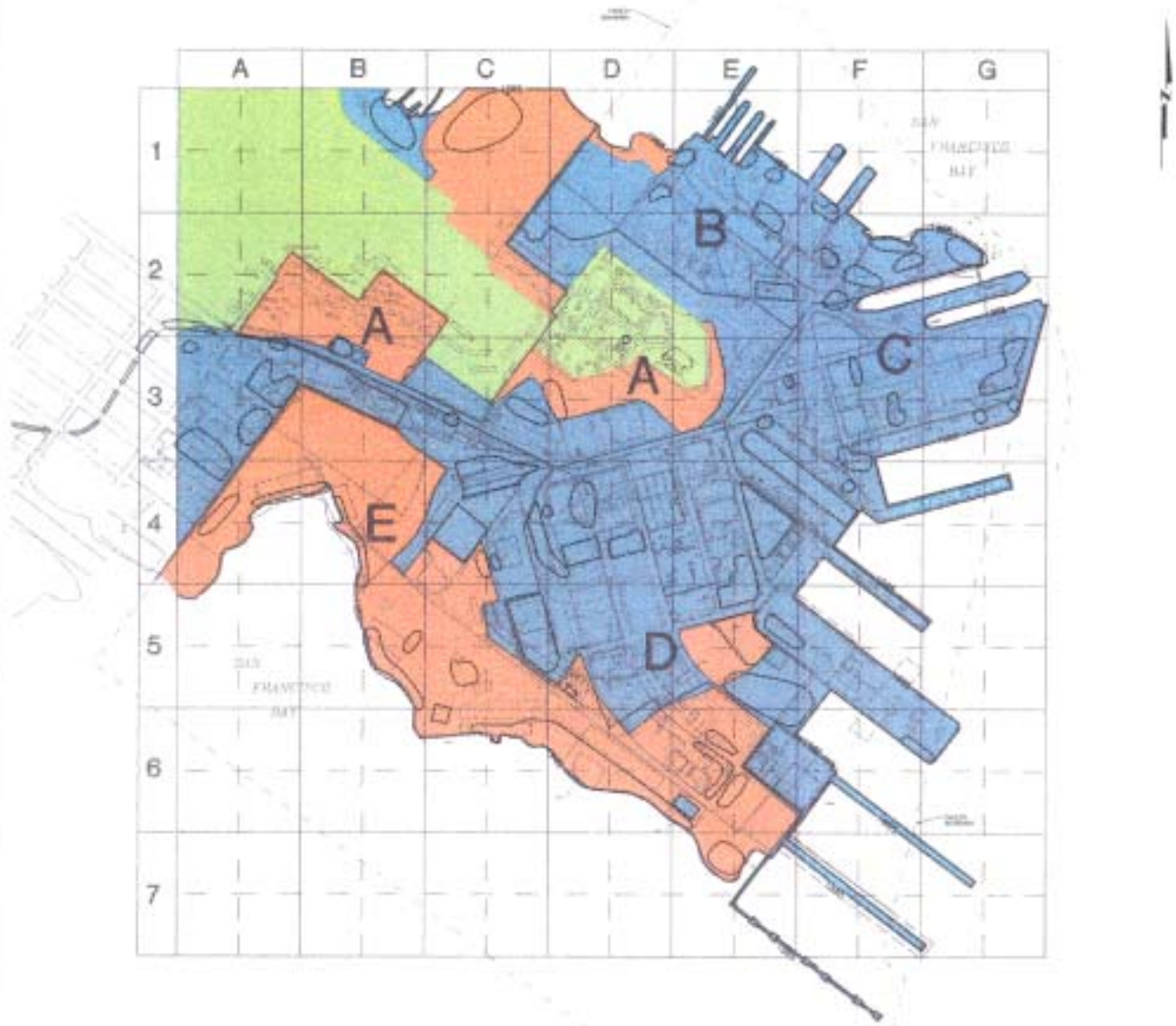
ENGINEERING FIELD ACTIVITY WEST

Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

POTENTIAL AREAS OF CONCERN IDENTIFIED IN 1969 AERIAL PHOTOGRAPH

FIGURE 5
SHEET 1 of 1



EXPLANATION

GRID SUBCELL DESIGNATIONS

POTENTIAL AREA OF CONCERN

OPEN AREA

INDUSTRIAL AREA

RESIDENTIAL AREA

EXISTING BUILDING

LOCATION OF FORMER BUILDING

1985 SHORELINE

PARCEL BOUNDARY

IR SITE BOUNDARY

PA SITE BOUNDARY

CHANGE OR MAINTAIN TRACKS

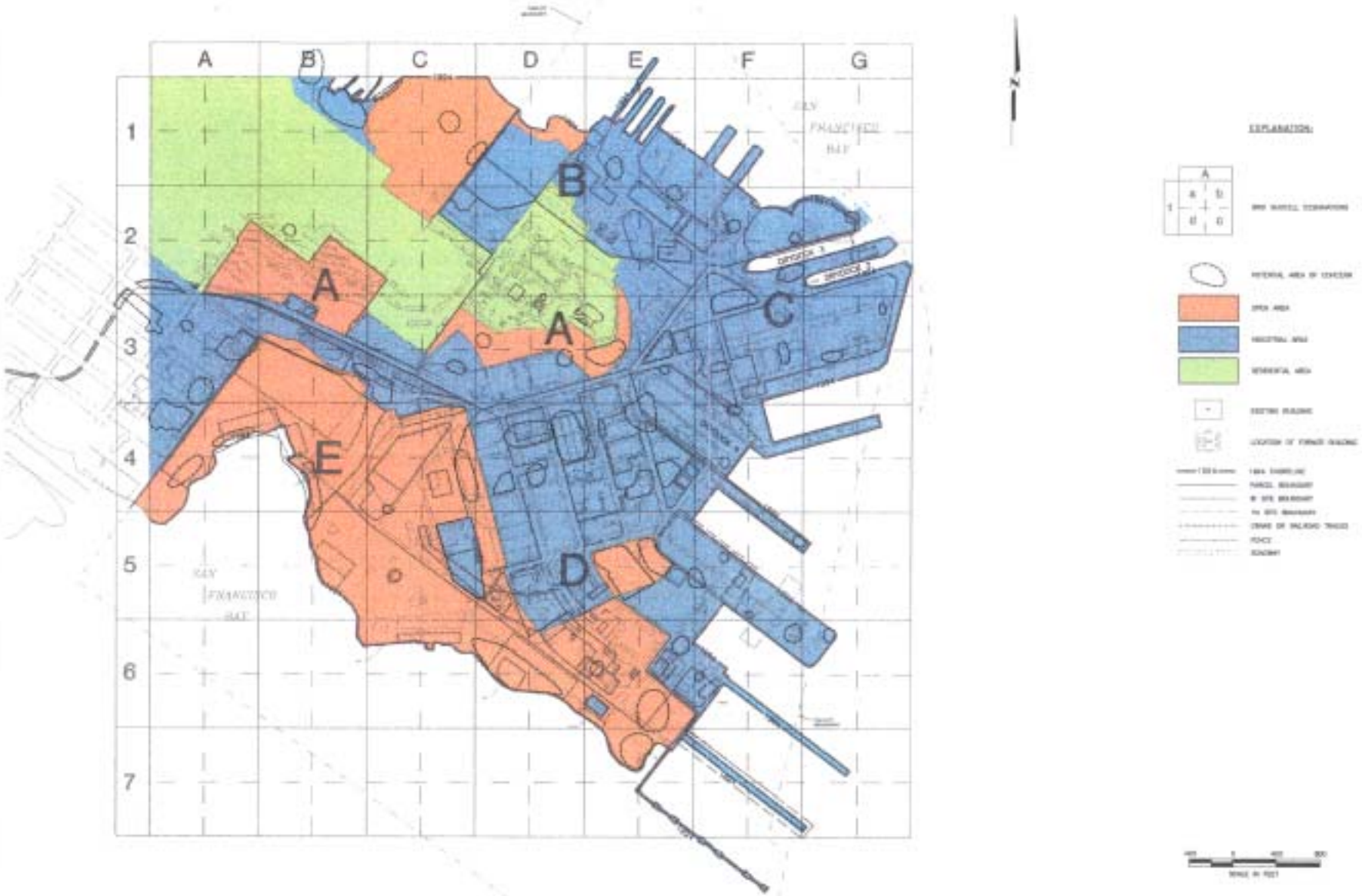
FENCE

ROADWAY

NOTE: NO CHANGES IN SHORELINE DESCRIBED AFTER 1970.

SCALE IN FEET

DRAWN:	PROJECT NO. 11400 1600	Harding Lawson Associates Engineering and Environmental Services	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ENGINEERING FIELD ACTIVITY WEST Aerial Photograph Review Report Engineering Field Activity West Hunters Point Annex San Francisco, California	POTENTIAL AREAS OF CONCERN IDENTIFIED IN 1985 AERIAL PHOTOGRAPH	PLATE 2
CHECKED:	SCALE: 1"=400'				SHEET 1 of 1
APPROVED: CAS					DIVISION NUMBER
DATE: 12/22/95					DATE: 11/95



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Engineering and Environmental Services

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST DIVISION
ENGINEERING FIELD ACTIVITY WEST
Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

POTENTIAL AREAS OF CONCERN IDENTIFIED IN 1994 AERIAL PHOTOGRAPH

PLATE 7
SHEET 1 of 1
REVISION NUMBER:
DATE: 11/94

DRAWN:
ENGINEER:
CHECKED:
APPROVED: CAS
DATE: 12/22/95
PROJECT NO.
SCALE: 1"=400'

APPENDIX

AERIAL PHOTOGRAPHS

Index of Aerial Photographs Used for Interpretation[1]
Aerial Photograph Review Report
Hunters Point Annex
San Francisco, California

Date Flown	Negative Number
1935	AV-248-06-01
	AV-248-06-02
7-29-46	AV-9-9-6
	AV-9-9-7
12-30-69	AV-933-09-02
	AV-933-09-03
10-15-85	AV-2670-7-7
	AV-2670-7-8
	AV-2670-7-9
	AV-2670-8-2
	AV-2670-8-3
	AV-2670-8-4
6-10-94	AV-4661-7-4
	AV-4661-7-5
	AV-4661-7-6

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1 Photographs were sent with an earlier deliverable.

DISTRIBUTION

Aerial Photograph Review Report
Engineering Field Activity West
Hunters Point Annex
San Francisco, California

December 22, 1995

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Quality Control Reviewer

Carl J. Michelsen, R.G. 5172
Associate Geochemist

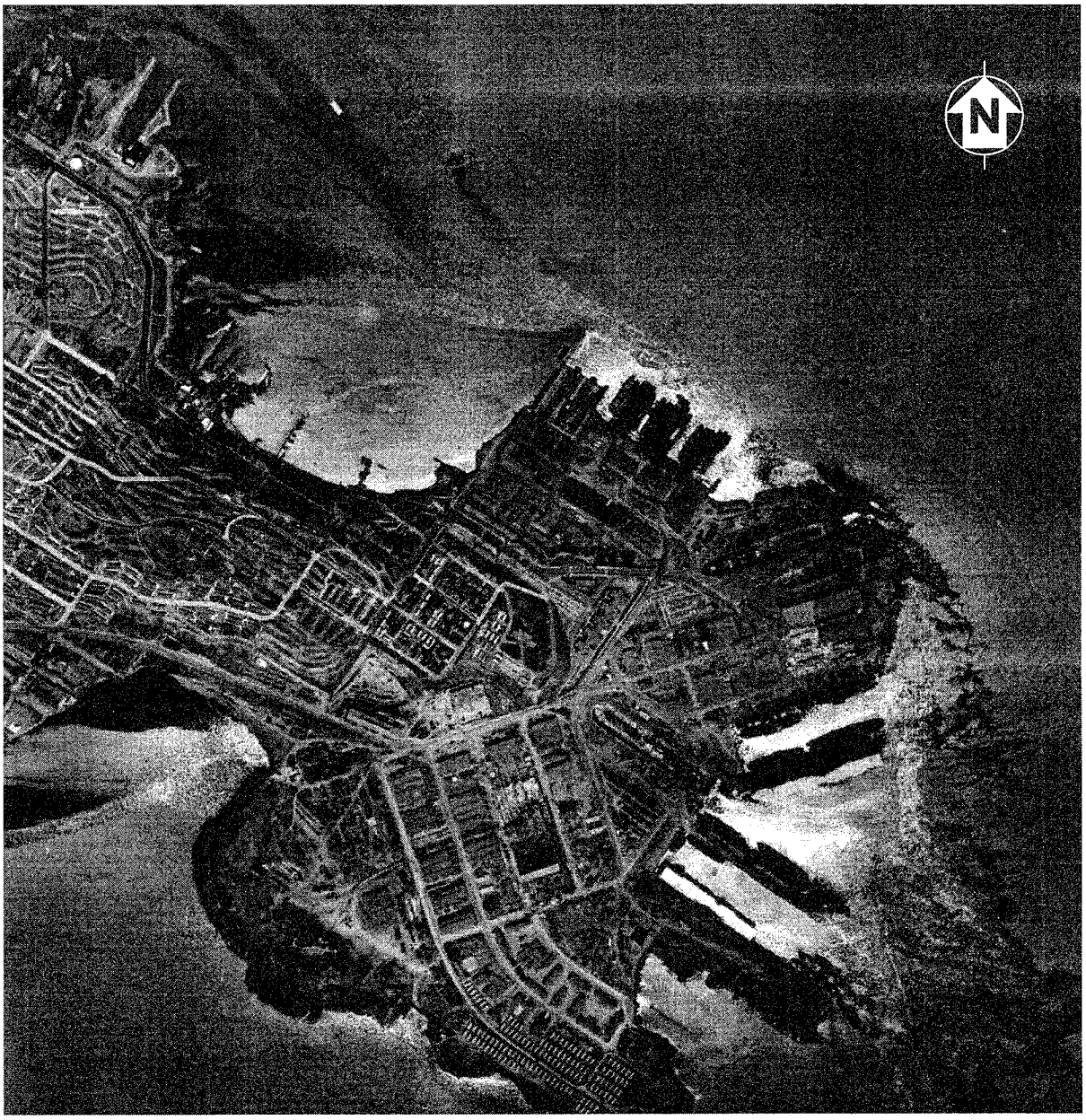
CAS/DFL/kke/K42714-H

0 500 1000 2000

APPROXIMATE SCALE IN FEET

FIGURE C-1
AERIAL PHOTO, 1935
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

DATE: 02/24/96 JLH DN FILE NAME: 0690012M02HP-35.DS4

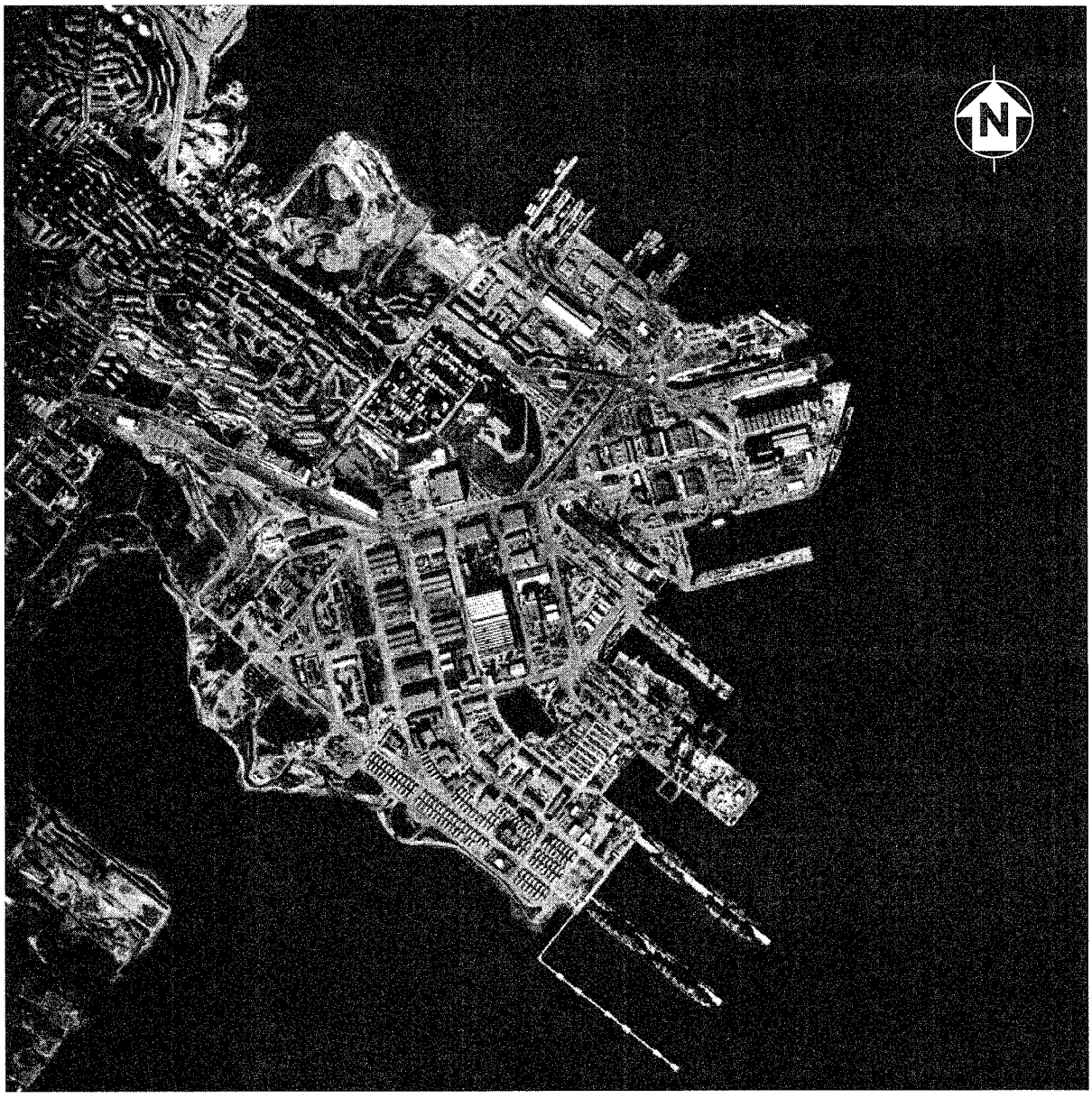


0 500 1000 2000

APPROXIMATE SCALE IN FEET

FIGURE C-2
AERIAL PHOTO, 1946
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

DATE: 02/24/96 JLH DN FILE NAME: 069\012M\02\HP-46.DS4

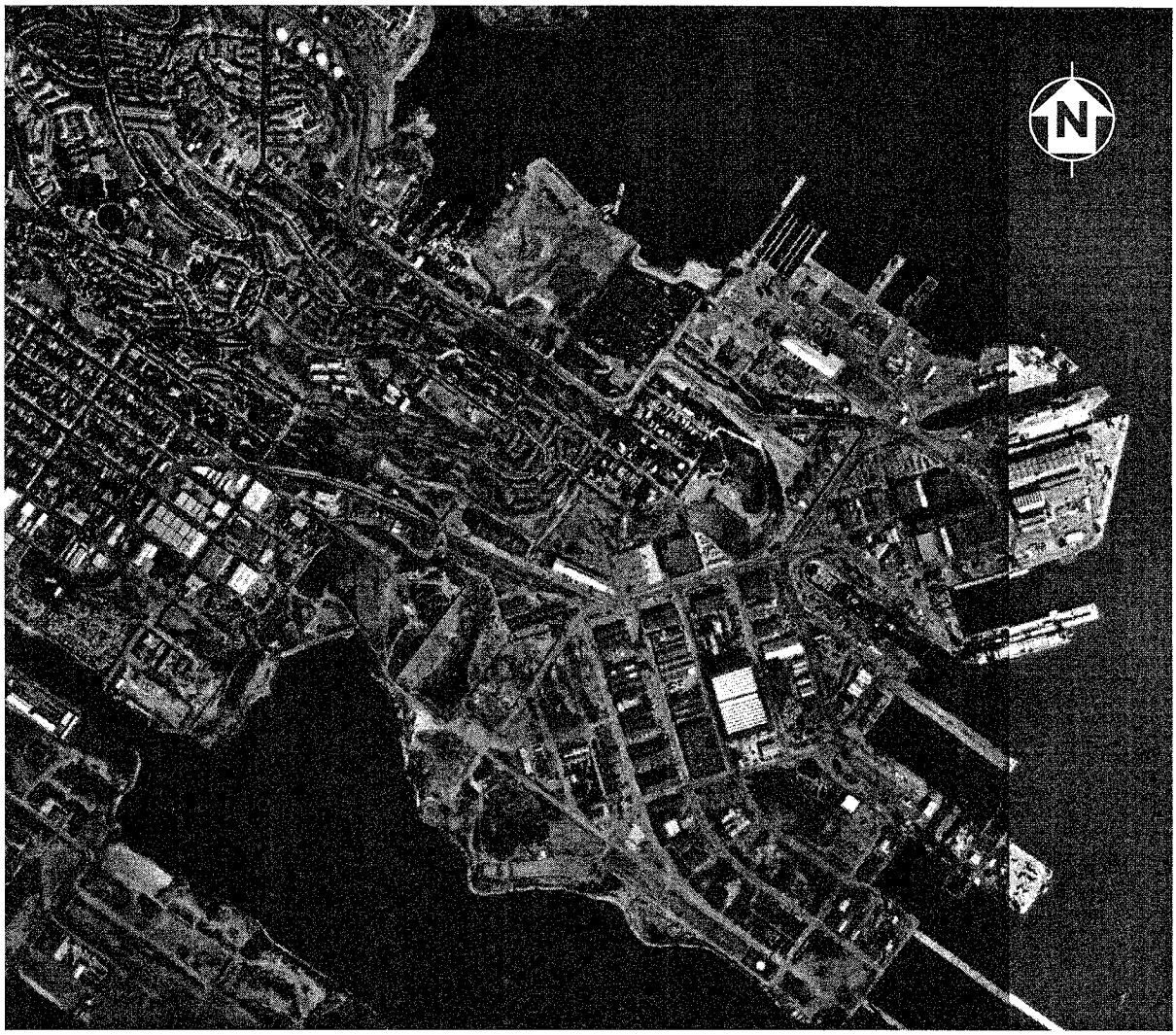


0 500 1000 2000

APPROXIMATE SCALE IN FEET

FIGURE C-3
AERIAL PHOTO, 1969
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

DATE: 02/24/96 JLH DN FILE NAME: 0691012M\02\HP-69.DS4



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APPROXIMATE SCALE IN FEET

FIGURE C-4
AERIAL PHOTO, 1985
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

DATE: 02/24/96 JLH DN FILE NAME: 069\012M\02HP-85.DS4

0 500 1000 2000

APPROXIMATE SCALE IN FEET

FIGURE C-5
AERIAL PHOTO, 1994
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

DATE: 02/24/96 JLH DN FILE NAME: 069\012M\02\HP-94 DS4

APPENDIX D

SUPPORT DOCUMENTATION FOR TITLE SEARCH

(31 Pages)

HUNTERS POINT ANNEX

Potentially Responsible Party Search

prepared for
PRC Environmental Management, Inc.
135 Main Street, Suite 1800
San Francisco, CA 94105
S5086-95-012-058

prepared by
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Scope of Investigation

The purpose of the investigation was to conduct a limited title search on properties comprising Hunters Point Annex, and to identify businesses that may have generated hazardous materials on those properties prior to the federal government acquiring title to the properties.

The properties to be researched consisted of thirty six acquisitions in which the federal government acquired title to numerous county parcels with each acquisition. The government acquisitions were comprised of several thousand county parcels with close to one thousand separate owners.

Investigation Conducted

The following sources were searched unsuccessfully for assessor maps and parcel histories for Hunters Point Annex covering the pre-federal acquisition period between 1940 and 1958. Assessor maps for this period would have shown the location of businesses and what improvements had been made to the property. Though many counties keep such maps indefinitely, San Francisco is an exception. The county has no archives where such records are kept, and county personnel had no recollection of seeing such historical documents.

* City and County of San Francisco Assessor's Office
* City and County of San Francisco Recorder's Office
* San Francisco Public Library: History Room, old publications department, reference section, periodical section, and government publications section.
* State Land Commissioners Office, Sacramento, CA.
* University of California, Bancroft Library, Berkley, CA.
* San Francisco State University, San Francisco, CA
* U.S. District Court, Northern District
* Federal Record Center
* California Historical Society Library
* San Francisco Fire Department
* San Francisco Health Department, Hazardous Material Section
* Stuart Title Company
* Old Republic Title Company
* First American Title Company
* TransAmerica Title Company

The U S Attorneys Office and the Federal Archives office indicated San Francisco County has a notorious reputation for destroying old records without accountability. Title companies were contacted who were in business in San Francisco as far back as 1940 but none had any old assessors maps. The title company which conducted title searches for the Navy on some parcels of land is no longer in business.

Site certification reports were generated by the U. S.Attorney's Office at the time property was acquired from private landowners for inclusion in Hunters Point Annex. These reports would have shown how much the government paid for a specific parcel of land, and why that amount was justified. In addition these site certification records would have shown what improvements had been made to the property and to what uses the property had been put. The site certification reports were not included in the Civil Action files stored in the Federal Archives at San Bruno, CA, the U.S. District Clerk's Office, or at the U S Attorneys Office. The site certifications were also sought but not found at:

*San Francisco Public Library
*State Land Commissioners Office, Sacramento, CA.
*University of California, Bancroft Library, Berkley, CA.
*San Francisco State University, San Francisco, CA
*Engineering Field Activity West, San Bruno, CA

Records of the City and County of San Francisco Public Health Department were searched for permit violations and health and safety violations. The department had no records available in their office or in archives that dated back prior to the federal government's acquisition of Hunters Point Annex.

The California Department of Health Services had no records dealing with the treatment, storage and disposal of hazardous waste or permits dating back to the pre-government acquisition period.

The U.S. Environmental Protection Agency had no administrative report on the Hunters Point Annex property. Any information pertaining to businesses suspected of environmental violations would be indexed by the name of the business, and could not be cross referenced through address or location.

The San Francisco Fire Department had no records available for the Hunters Point Annex property prior to 1972, when all of their historical records were turned over to the San Francisco Health Dept. But the San Francisco Health Department only has San Francisco Fire Department records dating back to 1972. Consequently no underground storage tank permits for the site and vicinity were available. There were no records of industrial waste generation, storage, discharge or disposal permits, hazardous material and hazardous waste inventory, or reported fuel leaks.

The San Francisco County Department of Public Works had no old records available which would have dealt with industrial waste discharge permits or maps of major waste systems such as landfills or transfer stations. Efforts were made to locate building records, permits, certificates of occupancy, and plot plans at the San Francisco County Building Department prior to 1958. No such records were available.

Many San Francisco firemen serving the Hunters Point area prior to government acquisition are deceased. One individual, Peter Sikora,Sr., was interviewed by telephone on August 29, 1995. He retired in 1973 as Assistant Chief of the fire department in the U.S. Navy Shipyard at Hunters Point Annex. Sikora began working as a fireman in the shipyard in Sept. 1945. Sikora believes that prior to World War II in 1941 there was very little improved property in the Hunters Point Annex area other than the Bethlehem Shipyard purchased by government acquisition for the Navy Shipyard. During the years he worked as a fireman he recalls no oil spillage or oil seepage or hazardous waste material being left and cleaned up from any former businesses in the area. There were no explosions or toxic waste areas left by any former businesses or by any businesses still operating in the area prior to the completion of the government acquisition of property. Other than new housing off the shipyard premises, Sikora believes nearly all the Navy Shipyard property was acquired and fenced by the time he went to work for the fire department in 1945. Only one other fireman was found who worked at the Navy Shipyard in the mid-1940's but he worked only a short time and had no information.

When the Hunters Point area was originally plotted in 1868 there was speculation that the city of San Francisco would develop in that area. Property sold for close to $3,000 per lot. The city did not develop in that direction and, by depression time in the mid-1930s, property was selling for $50 per lot. Aerial photographs show very little business in the Hunters Point area during the 1930s other that the Bethlehem Steel Shipyard Dry Dock. There were businesses related to shrimp fishing which died out by the late 1930s because of dwindling shrimp supplies, and a number of boat builders. In the late 1930s and early 1940s the Hunters Point Annex area had several stock yards and numerous butcher houses and became known as " Butcher Town".

The San Francisco Historical Society had no information on the Hunters Point Annex area between 1935 and 1943. There was considerable information published concerning the building of the the Navy Shipyard and its facilities during World War II, but only a few photographs were found in the Historical Section of the San Francisco library and at the Federal Archives of the Hunters Point Annex area prior to federal acquisition. In 1941 the narrow tongue of land which is Hunters Point, projected into San Francisco Bay and only had one permanent building and the two dry docks of the Bethlehem Shipbuilding Company. After acquisition of the shipyard property by the Navy, Point Avisadero, a hill in the center of the peninsula, was leveled and the soil used to fill behind the bulkhead built by the Corps of Engineers.

The Sanborn Insurance maps produced in 1933 and 1938 and updated to 1951 include the names of some businesses in the Hunters Point area. Production of Sanborn maps during other years was not practical because of limited businesses in the area and lack of insurance customers. Only two reverse telephone directories were located for that period of time: a 1933 San Francisco telephone directory and a 1940 telephone directory. Businesses were traced according to address and street. Augmenting the reverse telephone directories were old city and telephone directories found at the San Francisco Library, which were published annually but had no reverse street directories. From those sources businesses could be located on old street maps of the Hunters Point Annex area. Limited aerial photographs also show some businesses in the area prior to Navy occupation. Only companies are identified on the map which possibly could have contributed hazardous waste, oil or chemical spillage. A review of the above sources indicate that more extensive commercial, industrial and residential development had occurred to the west of the shipyard.

There are no historical books or papers which deal specifically with industry in the Hunters Point Annex area between 1935 and 1943. However, the San Francisco city and telephone directories list companies which operated in the Hunters Point area for a number of years which may have contributed to hazardous waste pollution. Foremost is Bethlehem Steel Company, which operated a dry dock at Hunters Point covering the period between 1918 and Federal acquisition in 1940. Other possible contributors of hazardous waste or waste material causing environment concern are listed below.

Government Acquisition

In 1958, the Navy undertook a program to obtain and collate the land holding records of the San Francisco Shipyard. It had been found that the land holding records in the possession of

the District Public Works Office were incomplete and unorganized. The land comprising the shipyard was acquired from approximately one thousand different owners in thirteen acquisitions over a period of eighteen years. There were twenty condemnation cases, twenty-nine direct purchases and four transfers from other agencies. Much of the acquisition occurred during World War II under emergency conditions. As a result, records are scattered among such agencies as the Federal Housing Administration, the Navy, Federal courts, title companies, the county recorder's office, and assessor records.

Initial inquiries determined that the many title documents and court records would amount to several thousand pages. The District Public Works Office has compiled these records which are available for review. These records contain legal descriptions of the land acquired along with maps outlining the areas acquired. The District Public Works Office produced a summary report, Report of Navy-Controlled Real Estate at the San Francisco Naval Shipyard, which is a synopsis of the various acquisitions of lands comprising the shipyard and adjacent housing areas.

Site Location:

The San Francisco Shipyard is located in the southeast area of South San Francisco comprising approximately one and one-half square miles in a peninsula known as Hunter Point. Development in the area began in 1868, when small lots twenty-five feet wide sold for as high as $2,850.00. However, by 1936 the real estate market in the area was depressed and the development did not materialize. The initial acquisition by the Navy in 1940 was of the Bethlehem Shipbuilding Company dry docks. Subsequent acquisitions were for expansion of the shipyard facilities and for housing of Navy personnel and shipyard employees, which were acquisitions by and through the authority of the Federal Public Housing Authority.

The following list of acquisitions follows the sequence of the Navy Real Estate Summary obtained from the District Public Works Office. The Summary consists of a chart listing the acquisitions and five large-scale maps delineating the acquisitions by the case number of the condemnation proceedings in U.S. District Court, Northern District of California, Southern Division. The map reference utilizes the federal case number for location of the parcels affected by the condemnation proceeding. Block numbers used to locate the area referenced are derived from the County Assessor's Map of 1941 (amended), which lists all blocks in the Hunters Point area, as well as the former meander line outlining the former shoreline prior to the establishment of the Bulkhead line and subsequent back filling.

Hunters Point Annex

Acquisitions

Item # 1

Map Reference:	Navy Real Estate Summary, Sheet 1
Instrument:	Deed No. 3677-0R-349
History:	
December 31, 1918	Conveyed to Bethlehem Steel Company by Union Iron Works Dry Dock Company.
November 7, 1938	Ownership was transferred to Bethlehem Steel Company by the merger of Bethlehem Shipbuilding Corporation, Ltd..
November 12, 1940	Conveyed by Deed to U.S. Government
Attachment:	1

Item #2

Map Reference: Navy Real Estate Summary, Sheet 1

Instrument: Declaration of Taking, Case No. 22147

History:

April 22, 1942 — United States of America vs. Carrie F. Rednall, et al, Declaration of Taking, No. 22147, which included 230.5 acres of land consisting of 221 separate parcels of property, most of which were in ownership of private individuals. The property was acquired by annexation to the Navy shipyard. A preliminary survey evaluated the lots, size 25 x 100 feet to range from $750.00 in the business zone to $500.00 for a residential lot and $40.00 for an underwater lot.

Business owners:

Bethlehem Shipbuilding Company
Block No. 4592 Lot Nos. 1, 2, 4
Block No. 4616 Lot Nos. 2 to 10, 12 and 14 to 17

South San Francisco Dock Company

Block No.	4617	Lot Nos. 10, 11
Block No.	4658	Lot Nos. 4, 5
Block No.	4684	Lot No. 1

Block Nos. 4590, 4593, 4610, 4576, 4591, 4592, 4663 to 4665, 4684 to 4686, 4692, 4693, 4708 to 4713, 4720 to 4725

Houghton Company

Block No.	4634	Lot Nos. 5, 19

Vito Chiala

Block No.	4617	Lot Nos. 13, 13a, 14

(Unknown business but Estimated Fair Compensation was $21,133.60.)

George P. Chan Restaurant
Block No. 4610 Lot No. 1

Source: 1941 San Francisco Telephone Directory

Fred Assalino
Block No. 4617 Lot Nos. 14b, 15
(Unknown business but Estimated Fair Compensation was $10,500)

Attachment: 2

Item #3

Map Reference:	Navy Real Estate Summary, Sheet 1
Instrument:	Declaration of Taking, Case No. 22261
History:	
July 25, 1942	United States of America vs. Matilda Prior Andrews II, et al., Declaration of Taking included 193 acres of land which consisted of uplands, submerged lands and tide lands at the time of acquisition.
Attachment:	3

Item #4

Map Reference: Navy Real Estate Summary, Sheet 1

Instrument: Declaration of Taking, Case No. 22363

History:

November 9, 1942 — United States of America vs. Nick J. Suttich, et al, included 1.15 acres of land comprising 14 individual properties. No corporate ownership was listed. The land as originally acquired consisted of six tracts of land aligned along the Southern Pacific Railroad right-of-way. The properties in this Taking included:

Block No.	4726	Lots:	3 thru 10
Block No.	4734	Lots:	2 thru 5
Block No.	4735	Lots:	17 thru 24
Block No.	4756	Lots:	20, 20B, Portion of 29
Block No.	4763	Lots:	Portions of 21, 21A, 21B, 22

July 26, 1943 — The Navy transferred 7,750 square feet (.18 acres) to the War Assets Administration (Navy-Controlled Real Estate, Twelfth Naval District A Report on San Francisco Naval Shipyard).

March 16, 1948 — The Navy transferred by Declaration of Surplus Real Property 8,500 square feet (.195 acres) to the War Assets Administration (Navy-Controlled Real Estate, Twelfth Naval District A Report on San Francisco Naval Shipyard).

Attachment: 4

Item # 5

Map Reference:	Navy Real Estate Summary, Sheet 1
Instrument:	Declaration of Taking, Case No. 22416
History:	
December 24, 1942	The Navy had taken possession on this land pursuant to an Order for Immediate Possession. (Navy-Controlled Real Estate, Twelfth Naval District A Report on San Francisco Naval Shipyard)
April 29, 1943	United States of America vs. William Henry Ash, et al, included 61.05 acres of land and involved 140 individual owners.
Business owners:	South San Francisco Dock Company Block Nos. 4609, 4594, 4589
Attachment:	5

Item #6

Map Reference: Navy Real Estate Summary, Sheet 1

Instrument: Declaration of Taking, Case No. 22197

History:

May 29, 1942	United States of America vs. Southern Pacific Company, et al, included 420,500 square feet of land. The property is described as a series of parcels outside the perimeter of the shipyard and was formerly a portion of the Southern Pacific Company's railroad from San Francisco to San Bruno. The properties are portions of Block Nos. 4735, 4756, 4763, 4786, 4793, 4806, 4812, 4827, 4832, 4846, 4831.
February 27, 1946	The Navy transferred 1.26 acres to the Federal Public Housing Authority (Navy-Controlled Real Estate, Twelfth Naval District, (A Report on San Francisco Naval Shipyard).
June 12, 1947	The Navy transferred .17 acres to the Federal Public Housing Authority (Navy-Controlled Real Estate, Twelfth Naval District, (A Report on San Francisco Naval Shipyard)

Attachment: 6

Item #7

Map Reference:	Navy Real Estate Summary, Sheet 1
Instrument:	Declaration of Taking, Case No. 23985
History:	
June 19, 1945	United States of America vs. Anna J. Rock, et al, instituted at the request of the Federal Housing Authority. In the same action the government acquired a leasehold interest in 1.65 acres. The property is located in Block 4668.
June 16, 1945	The Federal Housing Authority transferred custody to the Navy of the fee-owned land and the leased land.
November 3, 1956	The lease was terminated and the leased lands acquired in fee in condemnation proceedings March 15, 1957, Declaration of Taking, Case No. 36272.
Attachment:	7(Declaration of Taking not available)

Item #8

Map Reference:	Navy Real Estate Summary, Sheet 1
Instrument:	Declaration of Taking, Case No. 24730-R
History:	
August 28, 1945	United States of America vs. Ray T. Burke, et al, condemnation proceedings instituted at the request of the Federal Public Housing Authority. The property consisted of 11.02846 acres including 62 parcels divided into Areas A and B, involving 62 individual owners. Area A is divided into 41 parcels with government ownership and Area B contains 21 parcels under lease to the Navy until 1953, with part of it acquired in fee in a Declaration of Taking, Case No. 36566, June 21, 1957.
Attachment:	8

Item #9

Map Reference	Navy Real Estate Summary, Sheet 1
Instrument:	Declaration of Taking, Case No. 25032
History:	
July 10, 1947	United States of America vs. South San Francisco Dock Company, et al, instituted by the Federal Public Housing Authority. The property consists of 8.54 acres and is located between Oakdale and Palou Avenues and Fitch and Donahue Streets in Blocks 4736 and 4737. (See Assessor's Map 1941)
Attachment:	9

Item # 10

Map Reference: Navy Real Estate Summary, Sheet 1

Reference No.: 24707 and 23381

Instrument: Declaration of Taking, Case Nos. 24707 and 23381

History:

June 21, 1945 — United States of America vs. Joseph Bonnici, et al, included 50.2111 acres of land., consisting of 234 parcels divided into areas A, C, F, G, H, I.

Area A — Located in Block 4696 and in portions of Block Nos. 4708 and 4726, all of which are within the perimeter of the shipyard. Area A is divided into Parcels 1 thru 40 and parcels A thru H. Parcels 1 thru 30 are in Block 4696 and appear to be unimproved properties based on a review of the estimated values and that most of the owners listed are private individuals. Parcels 31 to 40 are in Block Nos. 4708 and 4726.

Business owners:

South San Francisco Dock Company

Block No. 4708 Parcel 31	Lot 4, containing 15,000 square feet
Block No. 4708 Parcel 36	Lot 2, containing 15,000 square feet

Western Pacific Railroad Company

Block No. 4708 Parcel 35	Lot 1, containing 15,000 square feet
Block No. 4708 Parcel 39	Lot 6, containing 15,000 square feet

Hazardous Wastes: Hazardous wastes from the railroad industry come predominantly from maintenance operations in which trains are cleaned and repaired.

Wastes generated may include strong acid or alkaline materials, spent cleaning and degreasing solvents, ignitable paint wastes, and lead acid batteries. Older freight cars may generate lead-contaminated lubricating pads.

City and County of San Francisco
Parcels A, B,C,D,E,F,G and H, being portions of street and avenues, LaSalle Avenue, Donahue Street, McKinnon Avenue, Earl Street, Newcomb Avenue and Fitch Street.

Map Reference: Navy Real Estate Summary, Sheet 1

Area C

Located in portions of Block No. 4785, 4786, 4793 and 4794, which are outside the perimeter of the shipyard.

Map Reference: Navy Real Estate Summary, Sheet 1
San Francisco County Assessor Map-1941

Area F

Located in Block No. 4649, which became part of the Federal Public Housing Authority housing area identified as the Ridge Point War Dwellings (See Sanborn Map). Area F is comprised of Parcels 94, 95, 96 and 97, located in Block No. 4649-A, and Parcel T, which is a portion of Innes Avenue that was owned by the City and County of San Francisco. Parcel 97 was owned by the State of California

Map Reference: Navy Real Estate Summary, Sheet 2
1941 San Francisco County Assessor Map
Sanborn Map

Area G

Located in portions of Block Nos. 4650 and 5275, which became part of the housing area known as the Ridge Point War Dwellings outside the shipyard. The area contained Parcel 98, located in Block No. 5275, Parcels 99 and 100 located in Block No. 4650, and Parcels U and V, portions of Keith Street and Innes Avenue respectively.

Map Reference:	Navy Real Estate Summary, Sheet 1 1941 San Francisco County Assessor Map Sanborn Map
Area H	Located in a portion of Block No. 5257, which became part of the housing area, the Ridge Point War Dwellings. The area contains Parcels 101, 102, 103, 104, and Parcel W, a portion of Keith Street all located in Block 5257, which is outside the shipyard area.
Map Reference:	Navy Real Estate Summary, Sheet 1 1941 San Francisco County Assessor Map Sanborn Map
Area I	Located in Block No. 5238, being all of Lots 1, 2, 3, 4, 16 and 17, which became part of the housing area, the Ridge Point War Dwellings.
Map Reference:	Navy Real Estate Summary, Sheet 2 1941 San Francisco County Assessor Map Sanborn Map
Area J	Consists of parcels located in portions of 55 separate blocks comprising government housing developments, including the Ridge Point War Dwellings.
Map Reference:	Navy Real Estate Summary, Sheet 1 1941 San Francisco County Assessor Map Sanborn Map
Attachment:	10
Instrument:	Declaration of Taking, Case No. 23381-R

History:

January 26, 1945	An amendment to Declaration of Taking, Case No. 24707, filed by the Federal Public Housing Authority was filed to correct the description

of the property taken under Taking No. 24707. The property is within the perimeter of the shipyard and was transferred by the Federal Public Housing Authority to the Navy for use as housing for naval personnel on January 6, 1950. The amended Taking involved 2.58 acres and consisted of:

Area A	Included Block No. 4679, (except Lots 2, 20, 25 and 27), and all of Block No. 4699, Lots 1, 2, 3, 4 and 5, and Block No. 4698, Block No. 4706, Lots 1 and 21, Block No. 4706, Lot 1.
Area B	Included 2 parcels divided into 17 properties in Block No. 4681.
Map Reference:	Navy Real Estate Summary, Sheet 1 1941 San Francisco County Assessor Map Sanborn Map
Attachment:	11

Item #11

Map Reference:	Navy Real Estate Summary, Sheet 1 1941 San Francisco County Assessor Map
Instrument:	Declaration of Taking, Case No. 22622
History:	
July 19, 1943	United States vs. Matilda P. Andrews II, et al, Case No. 22622, filed by the Federal Public Housing Authority in three condemnation proceedings consisting of 117.2870 acres of land and involved 386 parcels located in Block Nos. 4650, 4651, 4652, 4672, 4673, 4674, 4675, 4676, 4677, 4697, 4706, 4707, 4708, 4726, 4727, 4700, 4701, 4702, 4703, 4704, 4705, 4728, 4729, 4730, 4731, 4732, 5274, 5275, 5276, 5277, 5292, 5293, 5294, 5308.
March 11, 1943	Case No. 22456, United States of America vs. "...Albion E. Perley, et al."
June 16, 1943	United States of America vs. Frank Gonzales, et al., Case No. 22666, consisted of two parcels of land located in Block 4656.
Transfer to the Navy:	
October 27, 1955	Property owned by the City and County of San Francisco was taken by these condemnation proceedings which included an area within the shipyard perimeter bounded by Earl and Griffith Streets and Jerrold and Palou Avenues. The Public Housing Authority by letter transferred to the Navy 28 buildings containing 224 housing units, and five non-dwelling units. Included in the property was a former Police Headquarters Building of the City and County of San Francisco.
Attachment :	12

Item #12

Map Reference: Navy Real Estate Summary, Sheets 2 and 3
San Francisco Assessor Map-1941

Instrument: Declaration of Taking, Case No. 36272

History:

March 15, 1957 — United States of America vs. ...Charles L. Harney, et al. was filed by the Navy for expansion of the shipyard facilities consisting of 346.013 acres of land, which included submerged lands, tide lands and uplands that had been zoned for light and heavy industry prior to acquisition by the Navy. Title was acquired through two separate condemnation proceedings plus involved twenty-eight separate deeds in direct purchases.

June 21, 1957. — Declaration of Taking, Case No. 36566, title to .63 acres was acquired. Title to 28 parcels comprising 4.20 acres was acquired by deed pursuant to direct purchases.

Area A

Business Owners:

Charles L. Harney, Paving Contractor(1941 San Francisco telephone directory)
Block Nos. 4753, 4754, 4765, 4766, 4783, Lot Nos. 6. 7. 8 A and B, 4784, 4795, Lot Nos. 8A and B.

Address: Unknown

Legallet Wool Company, 1099 Revere Avenue (also known as Norton Wool Co., according to Sanborn Maps-1935 to 1949, located in Block 4785. Also listed in the San Francisco 1930-1961 telephone directories is the Legallet Tanning Company, in the 1100 block of Quesada Avenue, located in Block 4764. Legallet Wool Co., Inc., is

also referenced by the California Pacific Title Insurance Company as being the title owner as of July 1, 1955 of Lots 1, 2 and 3, Block 4735 in the title report for the Navy. (See Order No. 436431 of the Preliminary Report enclosed)

Hazardous Wastes:

The wool processing industry may have used some solvents that are classified as hazardous substances, such as, Perchloroethylene, Trichloroethylene, Methylene chloride, 1,1,1-Trichlorethane, toluene, Benzene, Xylene, Ethylene Dichloride, Varsol or Mineral Spirits. These solvents were typically used in the dry-cleaning of fabrics, wool and wool fabrics and in dyeing, scouring, and in some finishing operations for impregnating or coating of the fibers. In addition, solvents were used to clean machinery such as rollers and spinning machines.

Manufactures of leather products were likely to produce wastes from spent solvents and lacquers, materials containing lead, residual dyes, or materials producing hydrogen sulfide. Hazardous wastes would likely be spent Trivalent chrome, hexachloroethane, toluene, kerosene, mineral spirits and ethyl benzene. The hazardous wastes would likely be in sludges that contain lime, chromic hydroxide and sulfides.

A.B. Cooper Refinery, 1096 Quesada Avenue (1930-1940,San Francisco telephone and Polk Directories), located in Block 4655, on Quesada Avenue between Fitch and Griffith Streets. this Block is immediately adjacent to but outside the perimeter of the shipyard and not included in the acquisition.

Hazardous Wastes:

Products of the petroleum industry include, gasoline, diesel oil, heating oil, lubricating oil. Hazardous wastes produced include spect activated catalysts, such as alumina silicate, tetra-ethyl lead sludges, wastewater treatment sludges, crude tank sludges.

Dan P. Mayer (Maher) Paint Company, 1140 Revere Avenue. Listed in the San Francisco telephone and city directories in the years 1930 to

1953. Based on the address it is assumed that this company was located in Block 4785 or 4786.

Hazardous Wastes: Types of hazardous wastes produced by the paint manufacturing industry include ignitable paint wastes, spent solvents, residue of lead and cadmium-based pigments.

State of California and City and County of San Francisco,
The streets, avenues, Canal and the South Basin within
Areas A, B, B-1, G.

Imperial Glue Company, 900 Palou Avenue, at the intersection of Palou Avenue and Fitch Street.
Part of Block No. 4735

Hazardous Wastes: Potentially hazardous wastes produced by the glue manufacturing industry includes wastewater treatment sludge containing adhesive materials such as pheno-formaldehyde resins and urea-formaldehyde resins.

Area B: Submerged lands lying between Alvord Street and the Bulkhead line established February 13, 1948 by the Army Corps of Engineers and Bancroft and Shafter Avenues. This parcel comprises the South Basin.

Area C: Previously Area C was comprised of uplands and submerged lands and is located between Earl and Donahue Streets and Kirkwood Avenue and the Bulkhead line established by the Army Corps of Engineers February 13, 1948.

Business Owners: Biltwell Construction Company
Parcel Nos. 312 to 322 and 326 to 334, located in Block No. No.4595, Lots 1 to 11 and 15 to 23, which was tide lands at the time of acquisition.

Hazardous Wastes: Potential hazardous wastes from the construction industry include,

ignitable paint wastes, spent solvents generated in painting, cleaning, degreasing and maintenance. The types of wastes could include Ethylene Dichloride, toluene, Benzene, Xylene, Methyl Ethyl Ketone.

A. J. Devincenzi (Business unknown, but compensation values indicates improved property, possibly associated with the seafood industry or marine activities)
Block No. 4608, upland and tide lands.
Block No. 4632, uplands and tide lands.

Area D	Part of Block No. 4735
Area E	Parts of Block No. 4726 and Block No. 4697
Area F	Parts of Block Nos. 4707, 4708, 4697 and Block No. 4680
Business Owners:	Atlas Heating and Ventilating Company, Ltd. Part of Block No. 4735, Lots 4A to 8.
Address:	Unknown
Area G	Submerged land across the canal lying between Alvord and Donahue Streets and Bancroft and Wallace Avenues.
Attachment:	13

Item # 13

Map Reference:	Navy Real Estate Summary, Sheet 2
Instrument:	Declaration of Taking, Case No. 36566
History:	
June 21, 1957	United States of America vs. Rose Cavanaugh, et al., Filed by the Navy for expansion of facilities of the shipyard. The action allowed the owners of lands in Block 4643 to remove the buildings. Other parcels were located in Block 4632.
Attachment:	14

Items 14 -33

Deeds:

Recording:	Book 7081 Page 122
Instrument:	Warranty Deed
Date:	May 15, 1957
Grantor:	Elizabeth Hurney McAllister
Grantee:	United States of America
Location:	Block No. 4857, tide lands, which is located on Bancroft Avenue between Boalt and Coleman Streets.

Recording:	Book 7107 Page 66
Instrument:	Warranty Deed
Date:	June 28, 1957
Grantor:	Oscar G. Turnblad and Crocker-Angelo National Bank as Trustee for Florence M. Doye, Marjorie Evers, 3/4 interest.
Grantee:	United States of America
Location:	Block No. 4836, Lot Nos. 9-20, lying within the salt marsh and tide lands, now located on Armstrong Avenue between Dock and Tevis Streets.

Recording:	Book 7081 Page 127
Instrument:	Warranty Deed
Date:	May 23, 1957
Grantor:	Higgins & Son Realty Co.
Grantee	United States of America
Location:	Block No. 4843, Lot No. 6, Tide Lands

Recording:	Book 7092 Page 119
Instrument:	Warranty Deed
Date:	June 5, 1957
Grantor:	Anna Mount
Grantee:	United States of America
Location:	Block No. 4632, Lot Nos. 5a and 6, being upland and tide lands located on Hudson Avenue between Earl and Donahue Streets.

Recording:	Book 7072 Page 263
Instrument:	Warranty Deed
Date:	May 15, 1957
Grantor:	James H. Cox
Grantee:	United States of America
Location:	Block 4632, Lot 6A, located on Hudson Avenue between Earl and Donahue Streets.

Recording:	Book 7071 page 15
Instrument:	Warranty Deed
Date:	May 9, 1957
Grantor:	Tom Toy
Grantee:	United States of America
Location:	Block 4643, Lot Nos. 1 and 1A

Recording:	Book 7079 Page 202
Instrument:	Warranty Deed
Date:	May 20, 1957
Grantor:	Mareal J. Bouseal and Thersa F. Bouseal
Grantee:	United States of America
Location:	Block 4643, Lot 7

Recording:	Book 7068 Page 57
Instrument:	Warranty Deed
Date:	May 6, 1957
Grantor:	Nellie Louffler
Grantee:	United States of America
Location:	Block 4643, Lot No. 8

Recording:	Book 7071 Page 13
Instrument:	Warranty Deed
Date:	May 13, 1957
Grantor:	Richard Sin and Soo Yoki Chin Sin
Grantee:	United States of America
Location:	Block 4643, Lot Nos. 10 and 11

Recording:	Book 7075 Page 74
Instrument:	Warranty Deed
Date:	May 20, 1957
Grantor:	Peter A. Lolich and Priscilla M. Lolich
Grantee:	United States of America
Location:	Block 4643, Lot Nos. 12 and 13

Recording:	Book 7072, Page 261
Instrument:	Warranty Deed
Date:	May 3, 1957
Grantor:	Margaret Owning Cornell and Albert A. Cornell
Grantee:	United States of America
Location:	Block 4643, Lot Nos. 19 and 20

Recording:	Book 7067 Page 65
Instrument:	Warranty Deed
Date:	April 30, 1957
Grantor:	Jennie Parke Hughes
Grantee:	United States of America
Location:	Block 4643, Lot Nos. 21A and 22

Recording:	Book 7075 Page 70
Instrument:	Warranty Deed
Date:	May 17, 1957
Grantor:	Harriett E. Heffress
Grantee:	United States of America
Location:	Block 4643, Lot No. 22D

Recording:	Book 7086 Page 131
Instrument:	Warranty Deed
Date:	May 23, 1957
Grantor:	Roman Catholic Archbishop of San Francisco
Grantee:	United States of America
Location:	Block 4657, Lot Nos. 11 and 12

Recording:	Book 7069 Page 489
Instrument:	Warranty Deed
Grantor:	Joe Ghiselli and Elizabeth Ghiselli
Grantee:	United States of America
Location:	Block 4643, Lot 25

Recording:	Book 7081 Page 120
Instrument:	Warranty Deed
Date:	May 28, 1957
Grantor:	Lytton Henry Schwin and Mary Schwin
Grantee:	United States of America
Location:	Block No. 4840, Lot Nos. 15 and 16, Tide Lands

Recording:	Book 7068 Page 70
Instrument:	Warranty Deed
Date:	May 6, 1957
Grantor:	Paula Corona and Indalecio Corona
Grantee:	United States of America
Location:	Block 4700, Lot No. 2

Recording:	Book 7068 Page 72
Instrument:	Warranty Deed
Date:	May 6, 1957
Grantor:	Ofelia Corona
Grantee:	United States of America
Location:	Block 4700, Lot No. 3

Recording:	Book 7092 Page 115
Instrument:	Warranty Deed
Date:	June 3, 1957
Grantor:	Stauffer Foundation
Grantee:	United States of America
Location:	Block 4632, Lot No. 1

Attachment: 15

Enclosures

Real Estate Summary Map, 5 Sheets, Department of the Navy, Naval Facilities Engineering Command, Hunters Point Division, San Francisco Bay Naval Shipyard, California

A Report on San Francisco Naval Shipyard, Navy Controlled Real Estate, Twelfth Naval District

Shipyard Map, Dept. of the Navy, Bureau of Yards and Docks, District Public Works Office

Topographical Map, of the City and County of San Francisco, Dept. of Public Works, 1929.

Hunters Point map of U.S. Naval Reservation and surrounding area.

Map of the South San Francisco Homestead and R.R. Association, 1867.

Sanborn Map, 1935 to 1945 (amended), with index, listing streets and structures. Sheets 834 and 838 encompassing areas within the shipyard.

San Francisco City and County Assessor's Map (amended)-1941.

Aerial photo, Pacific Aerial Surveys, 1935. (Reprint)

Photocopies of aerial photos, Pacific Aerial Surveys, 1935, July 29, 1946 and May 10, 1955.

Sources:

Environmental Protection Agency, "Generators of Potentially Hazardous Industrial Waste in Region 10"

EPA, Office of Solid Waste and Emergency Response pamphlet, "Does Your Business Produce Hazardous Wastes?

APPENDIX E

SUPPORT DOCUMENTATION FOR ADJACENT PROPERTY EVALUATION

(32 Pages)

EPA GIS Toxic and LUST Site List----
Hunters Point Annex, San Francisco, California

Business Name	Address	Reference No.
PG & E	1000 Evans Ave	4184
Al's Auto Works	1101 Shafter Ave	CAL920464307
Alco Iron Works	1030 Quesada Av	308
Als Auto Works	1052 Shafter Av	10885
American Poultry Service	366 Hunters Point Blvd.	8875
Arnold and Egan Mfg Co	1515 Griffith St	10477; UST
Bayview Industrial Park	1801 Griffith St	38-005271
Buchner Design Studio	1030 Quesada Av	CAD109236851
Candlestich Point State Recreation	1801 Griffith St	38-005347
Cariani Sausage	2424 Oakdale Av	UST
CBS Earthmoving	Underwood/Griffith	UST
Central Roofing Supply	1035 Revere Av	15842
Colossal Pictures	1056 Shafter Av	16450
Donco Industries	894 Innes Av	CAD983608571
Langendorf United Bakeries	2725 Oakdale	UST
Modern Drapery Service	888 Innes Av	7676
Pacific Bell	1064 Revere Av	1281
Pepsi-Cola	1045 Revere Av	9323
Peters Painting and Waterproofing	1025 Quesada Av	CAD983673997
Petrini Property	2590 Oakdale	UST
PG & E Power Plant	1000 Evans Av	CAT080011570
Recommended Service	1064 Revere Av	CAL912183052
Sapunar Realty	966 Innes Av	38-0264;UST
Smart & Final	860 Innes Av	11301
Spinelli Coffee Company	1041 Quesada Av	16372
Unocal	1601 Griffith St	5016
Bay Area Drum	1212 Thomas Avenue	None

prc ENVIRONMENTAL MANAGEMENT INC. MEMORANDUM

SAN FRANCISCO OFFICE

Date : December 8, 1995

To : Barney Popkin and Jenny Qiu

From : Bill Ng

Subject : Investigating Potential Responsible Parties in the Vicinity of Naval Station Treasure Island, Hunters Point Annex, San Francisco, California - 044-0057AG4XAA

This memorandum summaries research activities conducted on the potential responsible parties (PRP) near the Naval Station Treasure Island, Hunters Point Annex (HPA) from May 4 to May 12, 1994. PRC gathered information regarding non-Navy activities that may have contributed to the surface water, groundwater, soil, and offshore sediment contamination in HPA.

The names and telephone numbers of the persons contacted are provided where applicable.

Compilation of Data to Date

1. The Regional Water Quality Control Board (RWQCB), San Francisco Region (Region 2) has unauthorized release reports for owners and/or operators of leaking underground storage tanks (LUST) in the County of San Francisco as well as other Bay Area counties. PRC reviewed the updated (March 1994) list for Leaking Underground Storage Tanks (LUST) for the County of San Francisco. Table 1 - "Non-Navy LUST Sites Near HPA" is prepared based on the LUST sites' proximity to HPA and the likelihood of contaminants migrating to HPA through surface water and groundwater pathways. Figure 1 shows location of LUST sites near HPA.

   Contact person(s): Judy Huang, RWQCB, (510)286-0447
   Johnson Lam, RWQCB, (510)286-0616
   Blair Allen, RWQCB, (510)286-1309

2. PRC reviewed the current list of active and inactive dischargers (including NPDES permit holders) in the San Francisco Bay Region from the RWQCB. Each discharger is required to file monthly and annual reports to RWQCB. Table 2 - "Non-Navy Dischargers Near HPA" is prepared based on the dischargers' proximity to HPA and the likelihood of contaminants migrating to HPA through surface water pathway. Figure 2 shows location of the dischargers near HPA.

Contact person(s): Judy Huang, RWQCB, (510) 286-0447
Johnson Lam, RWQCB, (510) 286-0616
Blair Allen, RWQCB, (510) 286-1309

3. PRC reviewed the Resource Conservation and Recovery Information System (RCRIS) database which provide information of generators, transporters and treatment, storage and disposal facilities of hazardous wastes within U.S. Environmental Protection Agency (EPA). Region 9 jurisdiction area. The RCRA-permitted facilities are classified as large quantity generator (LQG), small quantity generator (SQG) and very small quantity generator (VSQG). Tables 3A and 3B provide the RCRA identification number, address, code of hazardous wastes generated by these facilities for Non-Navy RCRA permitted facilities near HPA adjacent to India Basin and Islais Creek and South Basin and Yosemite Creek, respectively. Figure 3 shows location of the non-Navy RCRA-permitted facilities near HPA.

Contact person(s): Thomas Bowser, PRC, (415) 822-8349

4. PRC reviewed the emergency response file (1988 to present) from the Public Health Department, City and County of San Francisco (CCSF). Tables 4 provides the name and address of the emergency response site as well as the quantity and the date of the spill for Non-Navy facilities near HPA. Figure 4 shows the location of the spill sites near HPA.

Contact person(s): Richard Lee, CCSF, (415) 554-2789

5. Table 5 summaries a list of non-Navy, likely potential responsible parties (PRP) near HPA. Their files may be requested from the California/Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control and U.S. EPA. A brief explanation is provided for each site included in the list. Figure 5 shows the location of non-Navy, likely PRP sites near HPA.

Additional Information Sources

The following additional information sources were identified:

1. The City and County of San Francisco (CCSF), Local Oversight Program (LOP), through the Public Health Department is the lead agency for UST programs in San Francisco. UST reports/files and SWEEPS (a UST data base) are available on a fee basis.

Contact person(s): Leslie Lum, CCSF, (415)554-2757
Paula Stewart, CCSF, (415)554-2685
Amy Brownell, CCSF, (415)554-2727
Sue Cone, CCSF, (415)554-2733
Stephen Low, CCSF (415)554-2788

2. The San Francisco Fire Department (SFFD) keeps daily journal and annual reports of hazardous material spill/emergency response calls made in the City of San Francisco since

1984. PRC is not able to review either the daily journal or annual report. This source of information will be useful if the date of a particular spill *occurred* near HPA is known.

Contact person(s): Joe Vick, SFFD, (415)861-8000 Ext. 292
Jerry Gray, SFFD, (415)861-8000 Ext. 236
Mike Croshony, SFFD, (415)861-8000 Ext. 272

TABLE 1
NON-NAVY LUST SITES *NEAR* HPA
HUNTERS POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA

1. 7UP Bottling Company (38-0002)
   1590 Yosemite Ave., S.F. 94124

2. Angotti & Reilly Inc. (38-0010)
   1601 Galvez St., S.F. 94124

3. Arnold & Egan Manufacturing Co., Inc. (38-0031)
   1515 Griffith St., S.F. 94124

4. CBS Earthmoving (38-0072)
   Underwood Ave./Griffith St., S.F. 94124

5. Close Property (384111)
   680 Illinois St., S.F. 94107

6. DeVincenzi Trucking Co. (38-0134)
   1598 Carroll Ave., S.F. 94124

7. Esprit (384141)
   499 Illinois St., S.F. 94107

8. Exxon (38-0143)
   1111 Pennsylvania Ave., S.F. 94107

9. Figone Cold Storage Corp. (38-0147)
   420 17th St., S.F. 94107

10. Fireproofing Corporation (38-150)
    3830 Thud St., S.F. 94124

11. Gaehwiler Construction (384156)
    3rd St. & 19th St., S.F. 94107

12. Imbelloni Construction Co. (38-0185)
    Egbert Ave., S.F. 94124

13. Pacific Gas and Electric Co. (PG&E) (384236)
    1201 Illinois St., S.F. 94107

14. Royal Tallow & Soap (38-0250)
    429 Amador St., S.F. 94124

TABLE 1
NON-NAVY LUST SITES *NEAR* **HPA**
HUNTERS POINT **ANNEX (HPA),** *SAN* **FRANCISCO, CALIFORNIA**
(Page 2 of 3)

15. **Southeast** Water Pollution Control Plant **(38-0253)**
750 Phelps **St.,** S.F. 94124

16. San Francisco **Warehouse (38-0257)**
175 Napolean **St.,** S.F. 94124

17. Sapunar **Realty (38-0264)**
966 **Innes Ave.,** S.F. 94124

18. **Scannell** Property **(38-0265)**
2501 Ingalls **St.,** S.F. 94124

19. Scheid Industrial Supply **Co. (38-0266)**
4049 Third St., S.F. 94124

20. **San** Francisco Fire Department **(38-0296)**
909 **Tennessee St.,** S.F. 94107

21. **San** Francisco Port Commission **(38-0306)**
Pier **#70, S.F.** 94107

22. **San** Francisco Port Commission **(38-0307)**
Pier **#80,** S.F. 94107

23. **San** Francisco Port Commission **(38-0308)**
Pier **#40, S.F.** 94107

24. **San** Francisco Port Commission **(38-0310)**
145 **China** Basin **St.,** S.F. 94107

25. **San** Francisco Port Commission **(38-03** 11)
220 China Basin St., S.F. 94107

26. **San** Francisco Port Commission (384312)
333 Illinois **St.,** S.F. **94107**

27. **San** Francisco Port Commission **(38-0313)**
501 Army **St.,** S.F. 94124

28. San Francisco Port Commission **(38-0314)**
855 China **Basin** St., S.F. 94107

TABLE 1
NON-NAVY LUST SITES NEAR HPA
HUNTERS POINT ANNEX (HPA), SAN FRANCISCO, CALIFORNIA
(Page 3 of 3)

29. San Francisco Port Commission (38-0316)
Pier #46, The Embarcadero/Berry St., S.F. 94107

30. Shatz Property (38-0322)
2690 Third St., S.F. 94107

31. Todd Shipyards *Corp.* (38-0372)
20th St. & Illinois St., S.F. 94107

32. UNOCAL Station #0426 (38-0412)
3800 Third St. & Evans Ave., S.F. 94124

33. US Post Office (38-0414)
1300 Evans Ave., S.F. 94124

34. Kaiser Sand & Gravel (38-0477)
300 16th St., S.F. 94107

38-0002 = 38, code for the County of San Francisco + -xxxx, site number
LUST = leaking underground storage tank

TABLE 2
NON-NAVY DISCHARGERS *NEAR* HPA
HUNTERS POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA

1. Pacific Gas and Electric Co.
   Hunters Point Power Plant
   1000 Evans Ave., S.F., 94124

2. Pacific Gas and Electric Co.
   Portrero Power Plant
   1801 Illinois., s.F., 94124

3. San Francisco Port Commission
   Pier 98 Fill Site
   Pier 98, S.F., 94107

4. San Francisco Port Commission
   Pier 70 Fill Site
   Pier 70, S.F., 94107

5. San Francisco Port Commission
   Pier 94 Fill Site
   Pier 94, S.F., 94107

6. San Francisco, City & County
   Southeast Water Pollution Control Plant (SEWPCP)
   750 Phelps St., S.F. 94124

7. San Francisco Drydock, Inc
   Foot of 20th St., S.F. 94107

TABLE 3A
NON-NAVY RCRA PERMITTED FACILITIES *NEAR* HPA
(SOUTH BASIN & YOSEMITE CREEK)
HUNTERS **POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA**
(Page 1 of 2)

1. CAT 080010242
   Department of Health Services, Toxic Substances Control Program
   Bay Area Drum Site
   1212 Thomas Ave., S.F. 94124
   LQG : D001, D002, D006, D007, D008, D009

2. CAT 080013709
   Douglas Insulation Co. Inc.
   1360 Yosemite Ave., S.F. 94124
   LQG : U013

3. CAD 981584071
   Rollamatic Roofs Inc.
   1400 Yosemite Ave., S.F. 94124
   LQG : No waste codes in RCRIS

4. CAD 983646423
   Jim K Auto Body
   1430 Yosemite Ave., S.F. 94124
   SQG : D001, F003, F005

5. CAD 981170053
   Micro Tracers
   1370 Van Dyke Ava, S.F. 94124
   SQG : No waste codes in RCRIS

6. CAD 981457476
   Superior Furniture
   1212 Underwood Ave., S.F. 94124
   SQG : D001

7. CAD 982446320
   Giampolini & Co.
   1901 Carroll Ave., S.F. 94124
   SQG : F003, F005

NON-NAVY RCRA PERMITTED FACILITIES NEAR HPA
(SOUTH BASIN & YOSEMITE CREEK)
HUNTERS **POINT ANNEX (HPA), SAN FRANCISCO, CALIFORNIA**

HAZARDOUS MATERIAL CODE

D001	Ignitable
D002	Corrosive
DO03	Reactive
D004	Arsenic
D006	**Cadmium**
Do07	**Chromium**
D008	**Lead**
D009	**Mercury**
D011	Silver
F001	Spent halogenated solvents: tetrachloroethylene, methylene chloride trichlorethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons
F002	Spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, **1,1,2-trichloroethane,** chlorobenzene, **1,1,2-trichloro-1,2,2-trichlorofluoroethane,** ortho-dichlorobenzene, trichlorofluoromethane
F003	Non-halogenated solvents: xylene, acetone, ethyl acetate, ethylbenzene, ethylether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol
F004	Spent non-halogenated solvents: cresols and cresylic acid, nitrobenzene
F005	Non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane
U001	Acetaldehyde
U013	Dimethyl-sulfate
u220	**Meth**yl-benzene
U239	Dimethyl-benzene, xylene

Note
LQG - Large Quantity Generator
SQG - Small Quantity Generator
VSQG - Very Small Quantity Generator

TABLE 3B
NON-NAVY RCRA PERMITTED FACILITIES *NEAR* HPA
(INDIA **BASIN & ISLAIS *CREEK)***
HUNTERS POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA

8. CAT 08001 1570
Pacific Gas and Electric Co. (PG&E) / Hunters Point Power Plant
1000 Evans Ave., S.F. 94124
LQG : D001, D002, D004, F001, U001, U013, U220, U239

9. CA5 180090362
United States Postal Services Vehicle Maintenance
1300 Evans Ave., S.F. 94124
LQG : None listed

10. CAD 982348880
Magic Brush Inc.
1500 Davidson St., S.F. 94124
LQG : D001, D002, D003

11. CAD 982032484
J. Henry Auto Body
2501 Jennings St., S.F. 94124
LQG : F003

12. CAD 983608571
Donco Industries Inc.
894 Innes Ave., S.F. 94124
SQG : D001, F001, F003

13. CAD 982361016
Royal Tallow & Soap Co. / Del Monte Royal Tallow Co.
429 Amador St., S.F. 94124
VSQG : No waste codes in RCRIS

14. CAD 982361842
Del Monte Rendering
539 Amador In., S.F. 94124
VSQG : No waste codes in RCRIS

15. CAD 983642331
Lithographic Consultants
135 Quint St., S.F. 94124
SQG : D011

TABLE 3B
NON-NAVY RCRA PERMITTED FACILITIES *NEAR* HPA
(INDIA BASIN & ISLAIS CREEK)
HUNTERS **POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA**
(Page 2 of 3)

16. CAD 983595729
Staples & Pfeiffer
1295 Evans Ave., S.F. 94124
SQG : D001, D004

17. CAD 983650797
Circosta Iron & Metal Co. Inc.
1801 Evans Ave., S.F. 94124
VSQG : D001

18. CAD 041650094
Western MacArthur Co.
3150 Thud St., S.F. 94124
VSQG : No waste codes in RCRIS

19. CAD 983651167
Cardelli Graphics Inc.
3450 Third St., S.F. 94124
SQG : D002, D011

20. CAD 981963382
Rent A Junker
1590 Indiana St., S.F. 94107
SQG : F002, F004

21. CAD 981455405
Coast Truck Rental
1601 Indiana St., S.F. 94107
VSQG : No waste codes in RCRIS

22. CAD 981963507
Tech I Automotive
1460 Illinois St., S.F. 94107
SQG : D001, D006

23. CAD 003871451
Sheedy Drayage Co.
1215 Michigan St., S.F. 94107
TRANSPORTER

TABLE 3B
NON-NAVY RCRA PERMITTED FACILITIES NEAR HPA
(INDIA BASIN & ISLAIS CREEK)
HUNTERS **POINT ANNEX** (HPA), *SAN* FRANCISCO, CALIFORNIA
(Page 3 **of** 3)

24. CAD 982434938
Metropolitan California Stevedore
501 Army St., **S.F.** 94124
SQG : F001, F002

25. CAD 0663014658
Imperial Drayage Co. Inc.
715 Army St., S.F. 94124
TRANSPORTER

HAZARDOUS WASTE CODE

D001	Ignitable
m 2	Corrosive
D003	Reactive
D004	Arsenic
D006	Cadmium
m7	Chromium
D008	Lead
D009	Mercury
D011	Silver
F001	Spent halogenated solvents: tetrachloroethylene, methylene chloride trichlorethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons
F002	Spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, **1,1,2-trichloro-1,2,2-trichlorofluoroethane,** ortho-dichlorobenzene, trichlorofluoromethane
F003	Spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethylbenzene, ethylether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol
F004	Spent non-halogenated solvents: cresols and cresylic acid, nitrobenzene
F005	Non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane
U001	Acetaldehyde
U013	Dimethyl-sulfate
u220	Methyl-benzene
U239	Dimethyl-benzene, xylene

Note
LQG - Large Quantity Generator
SQG - Small Quantity Generator
VSQG - Very Small Quantity Generator
RCRA - Resource Conservation and Recovery Act

TABLE 4
NON-NAVY SPILL/EMERGENCY RESPONSE SITES NEAR HPA
HUNTERS POINT ANNEX (HPA), *SAN* FRANCISCO, CALIFORNIA
(Page 1 of 1)

1. Metropolitan California Stevedore Co.
Pier 80, S.F. 94107
800 gallons of diesel/gasoline spilled on pavement/storm drain on 12/28/90

2. Metropolitan California Stevedore Co.
Pier 80, S.F. 94107
100-200 gallons of diesel spilled on pavement/storm drain on 1/9/91

3. Pacific Gas & Electric
Hunters Point Power Plant
1000 Evans at Jennings, S.F. 94124
400 gallons of insulating fluid spilled on soil surrounding transformers on 1/12/91

4. San Francis Marine Center
835 China Basin St., S.F. 94107
100 gallons of diesel on 8/10/92

5. City and County of San Francisco (CCSF)
Southeast Water Pollution Control Plant (SEWPCP)
750 Phelps St., S.F. 94124
1079 gallons of raw sewage discharged to the Islais Creek near bridge
at the intersection of Third St. & Cargo Way on 1/6/94

TABLE 5
NON-NAVY LIKELY POTENTIAL RESPONSIBLE PARTY *NEAR* HPA
HUNTERS POINT ANNEX (HPA), SAN FRANCISCO, CALIFORNIA
(Page 1 of 2)

1. *CAD* 983608571
Donco Industries Inc. and/or previous owners
894 Innes Ave., S.F. 94124
(R); dumping of sandblast *grit* into India Basin, CCSF sampled site between 1986 to 1988.

2. CAT 080010242
Department of Health Services / Toxic Substances Control Program
Bay Area Drum Site
1212 Thomas Ave., S.F. 94124
(R); potential drum leaking site

3. San Francisco, City and County
Southeast Water Pollution Control Plant (SEWPCP)
750 Phelps St., S.F. 94124
(U, NPD, SER); overflow of 1100 gallons of raw sewage into Islais Creek Channel on 16-94

4. San Francisco Drydock, Inc.
Foot of 20th St., S.F. 94107
(NPD); suspected sandblast grit release

5. CAT 080011570
Pacific Gas and Electric Co.
PG&E Hunters Point Power Plant
1000 Evans Ave., S.F. 94124
(R, NPD, SER); spill of 400 gallons of insulating fluid on 1-12-91

6. CA5 180090362
United States Postal Services Vehicle Maintenance
1300 Evans Ave., S.F. 94124
(R, U); confirmed fuel leak site

7. SF Port Commission
Piers 40, 70, 80, & 98, S.F. 94107
(U, SER); various reports on diesel/gasoline spills from 100 to 800 gallons

8. CAD 982434938
Metropolitan California Stevedore
501 Army St., S.F. 94107
(U, SER); various reports on diesel/gasoline spills from 100 to 800 gallons

TABLE 5
NON-NAVY LIKELY POTENTIAL RESPONSIBLE PARTY NEAR HPA
HUNTERS POINT ANNEX (HPA), SAN FRANCISCO, CALIFORNIA

9. CAD 982361016
Royal Tallow & Soap Co. / Del Monte Royal Tallow Co.
429 Amador St., S.F. 94124
(R, U); proximity to Islais Creek

10. Todd Shipyard Corp.
20th St. and Illinois St., S.F. 94107
(U); possible shipyard activity release to bay

11. UNOCAL Station #0426
3800 Third St. & Evans Ave., S.F. 94124
(U); consultant's report indicated the site is located at an old landfill

12. Old Landfill (closed)
Third St. & Evans Ave. or near Yosemite Creek, S.F. 94124
(possibly R), need confirmation of location

Note:

CCSF - City and County of San Francisco
R - RCRA facility where release is known or suspected
RCRA - Resource Conservation and Recovery Act
U - Leaking underground storage tank site
SER - Spill/Emergency response site, from Department of Public Health, City and County of San Francisco emergency response file, 1988-April, 1994
NPD - NPDES permit holder
NPDES - National Pollutant Discharge and Elimination System

PARTIAL INVENTORY
OF
TOXIC SITESIFACTORS IN SAN FRANCISCO

Survey of Available Data Reported *to* the
Department of Public Health
Bureau of Environmental Health Management

December 1, 1995

10.2

STUDY OVERVIEW

The data presented in the following tables was extracted from existing data bases within the Department's Bureau of Environmental Health Management as well as external sources such as the Bay Area Air Quality management district and the California Department of Health Services. It represents a "snap-shot" picture of conditions at the time each report was generated. This is not a comprehensive scientific study but rather a survey of existing data.

The following documents are included in this report:

TABLE 1 Provides the geographic distribution of 13 factors which add to the toxic burden of a given neighborhood. The distribution for each factor is shown for the City as a whole as well as for seven geographic areas within the City.

For each factor/area combination, a percent of the total number and a rate per 1000 persons for each factor was calculated. For each area, the rates were summed to obtain the cumulative rate per 1000 persons, which are listed in the last row of the table. Comparison of these cumulative rates to each other and to the rate-sum for the entire City gives an approximation of the comparative "toxic loading" for each geographic area.

TABLE 2 Contains data from Table 1 for the Bay view Hunters Point/Potrero Hill/Mission sections of the City by the zip codes included in the area. It's format is similar to that of Table 1 and included city-wide totals for comparison purposes.

TABLE 3 Is a map of the City delineating zip codes for all neighborhoods indicated in Tables 1 and 2.

TABLE 4 Lists neighborhoods within the City and the inclusive zip codes.

TABLE 5 Provides a brief definition of each factor listed in the chart and its significance in assessing risk.

TABLE 6 is a series of six niaps indicating the actual location of specific toxic sites or factors, including:

- Acutely Hazardous Materials Sites
- Contaminated Underground Storage Tanks Sites
- Hazardous Waste Generators
- Underground Storage Tanks facilities
- Registered Hazardous Materials Facilities
- Hazardous Waste ON-site Treatment facilities

TABLE 1
A PARTIAL INVENTORY OF TOXIC SITES/FACTORS IN SAN FRANCISCO
GROUPED BY ZIP CODES AND NEIGHBORHOOD

AREA	A	B	C	D	E	F	G	TOTAL
ZIP CODES	94107 94110 94124 94135	94112 94134	94104 94105 94108 94109 94111 94133	94102 94103	94114 94131	94116 94121 94122 94127 94132	94115 94117 94118 94123	
TOTAL POPULATION	111,642	100,194	98,117	45,184	62,000	176,580	130,283	724,000
BAAQMD PERMITTED SITES	254	44	110	127	26	91	101	753
% OF TOTAL	33.73%	5.84%	14.61%	16.87%	3.45%	12.08%	13.41%	
RATE/1000 PERSONS	2.28	0.44	1.12	2.81	0.42	0.52	0.78	1.04
TOXIC AIR CONTAMINANT SITES	22	5	26	17	11	36	33	150
% OF TOTAL	14.67%	3.33%	17.33%	11.33%	7.33%	24.00%	22.00%	
RATE/1000 PERSONS	0.197	0.050	0.26	0.38	0.177	0.20	0.25	0.21
	2	0	0	0	0	0	0	2
% OF TOTAL	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
RATE/1000 PERSONS	0.018	0.00	0.00	0.00	0.00	0.00	0.00	0.003
	22	5	5	10	0	2	6	50
% OF TOTAL	44.00%	10.00%	10.00%	20.00%	0.00%	4.00%	12.00%	
RATE/1000 PERSONS	0.20	0.050	0.051	0.221	0.00	0.011	0.046	0.07
NUMBER OF SUPERFUND SITES	2	0	0	0	0	0	0	2
% OF TOTAL	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
RATE/1000 PERSONS	0.018	0.00	0.00	0.00	0.00	0.00	0.00	0.003
NU MU	699	111	450	391	49	208	241	2149
% OF TOTAL	32.53%	5.17%	20.94%	18.19%	2.28%	9.68%	11.21%	
RATE/1000 PERSONS	6.26	1.11	4.59	8.65	0.790	1.18	1.85	2.97
NUMBER OF HAZARDOUS WASTE GENERATORS	399	56	270	242	25	102	169	1263
% OF TOTAL	31.59%	4.43%	21.38%	19.16%	1.98%	8.08%	13.38%	
RATE/1000 PERSONS	3.57	0.56	2.75	5.36	0.40	0.58	1.30	1.74
NUMBER OF HAZARDOUS WASTE ON-SITE TREATMENT FACILITIES	12	2	25	17	1	8	13	78
% OF TOTAL	15.38%	2.56%	32.05%	21.79%	1.28%	10.26%	16.67%	
RATE/1000 PERSONS	0.11	0.020	0.25	0.38	0.016	0.045	0.100	0.11
NUMBER OF WASTE WATER TREATMENT PLANTS	1	0	1	0	0	1	0	3
% OF TOTAL	33.33%	0.00%	33.33%	0.00%	0.00%	33.33%	0.00%	
RATE/1000 PERSONS	0.009	0.000	0.010	0.000	0.000	0.006	0.000	0.004
NUMBER OF LOP SITES	161	37	105	87	11	44	85	530
% OF TOTAL	30.38%	6.98%	19.81%	16.42%	2.08%	8.30%	16.04%	
RATE/1000 PERSONS	1.44	0.37	1.07	1.93	0.18	0.25	0.65	0.73
NUMBER OF ACTIVE UNDERGROUND STORAGE TANKS	325	97	181	95	27	151	129	1005
% OF TOTAL	32.34%	9.65%	18.01%	9.45%	2.69%	15.02%	12.84%	
RATE/1000 PERSONS	2.91	0.97	1.84	2.10	0.44	0.86	0.99	1.39
NUMBER OF POTENTIAL DISCHARGE SITES	3	0	1	0	0	1	0	5
% OF TOTAL	60.00%	0.00%	20%	0%	0%	20.00%	0%	
RATE/1000 PERSONS	0.027	0.00	0.010	0.00	0.00	0.006	0.00	0.007
NUMBER OF PRE 1950 HOUSING UNITS	2030	3063	2030	738	935	2089	4108	14993
% OF TOTAL	13.54%	20.43%	13.54%	4.92%	6.24%	13.93%	27.40%	
RATE/1000 PERSONS	18.10	30.57	20.69	16.33	15.08	11.83	31.53	20.71

Note: Sites may not be unduplicated (i.e. a single site may be counted in more than one row.)

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FOR ZIP CODES IN THE BAY VIEW HUNTERS POINT NEIGHBORHOOD

ZIP CODE	94124	94107	94110	94135	AREA TOTAL	ZIP CODES
TOTAL POPULATION	27,435	11,977	72,230	na	111,642	724,000
BAAQMD PERMITTED SITES	108	77	68	1	254	753
% OF TOTAL	14.34%	10.23%	9.03%	0.13%	33.73%	
RATE/1000 PERSONS	3.94	6.43	0.94	na	2.28	1.04
TOXIC AIR CONTAMINANT SITES	9	6	7	0	22	150
% OF TOTAL	6.00%	4.00%	4.67%	0.00%	14.67%	
RATE/1000 PERSONS	0.33	0.50	0.10	na	0.197	0.21
NUMBER OF POWER PLANTS	1	1	0	0	2	2
% OF TOTAL	50.00%	50.00%	0.00%	0.00%	100.00%	
RATE/1000 PERSONS	0.04	0.08	0.00	na	0.018	0.003
NUMBER OF AHM FACILITIES	10	8	2	2	22	50
% OF TOTAL	20.00%	16.00%	4.00%	4.00%	44.00%	
RATE/1000 PERSONS	2.00	0.67	0.03	na	0.20	0.07
NUMBER OF SUPERFUND SITES	1	0	0	1	2	2
% OF TOTAL	50.00%	0.00%	0.00%	50.00%	100.00%	
RATE/1000 PERSONS	0.04	0.00	0.00	na	0.018	0.003
MATERIALS FACILITIES	340	213	141	5	699	2149
% OF TOTAL	15.82%	9.91%	6.56%	0.23%	32.53%	
RATE/1000 PERSONS	12.39	17.78	1.95	na	6.26	2.97
NUMBER OF HAZARDOUS WASTE GENERATORS	160	146	93	0	399	1263
% OF TOTAL	12.67%	11.56%	7.36%	0.00%	31.59%	
RATE/1000 PERSONS	5.83	12.19	1.29	na	3.57	1.74
NUMBER OF HAZARDOUS WASTE ON-SITE TREATMENT FACILITIES	3	5	4	0	12	78
% OF TOTAL	3.85%	6.41%	5.13%	0.00%	15.38%	
RATE/1000 PERSONS	0.11	0.42	0.06	na	0.11	0.11
NUMBER OF WASTE WATER TREATMENT PLANTS	1	0	0	0	1	3
% OF TOTAL	33.33%	0.00%	0.00%	0.00%	33.33%	
RATWOW PERSONS	0.036	0.000	0.000	na	0.009	0.004
NUMBER OF LOP SITES	65	55	41	0	161	530
% OF TOTAL	12.26%	10.38%	7.74%	0.00%	30.38%	
RATE/1000 PERSONS	2.37	4.59	0.57	na	1.44	0.73
NUMBER OF ACTIVE UNDERGROUND STORAGE TANKS	121	108	96	0	325	1005
% OF TOTAL	12.04%	10.75%	9.55%	0.00%	32.34%	
RATE/1000 PERSONS	4.41	9.02	1.33	na	2.91	1.42
NUMBER OF POTENTIAL BAY DISCHARGE SITES	2	1	0	0	3	5
% OF TOTAL	40.00%	20%	0%	0%	60.00%	
RATE/1000 PERSONS	0.07	0.08	0.00	na	0.027	0.01
NUMBER OF PRE 1950 HOUSING UNITS	336	445	1249	0	2030	14993
% OF TOTAL	2.24%	2.97%	8.33%	0.00%	13.54%	
RATE/1000 PERSONS	12.25	37.15	17.29	na	18.18	20.71

Notes:

Sites may not be unduplicted (i.e. a single site may be counted in more than one row,)

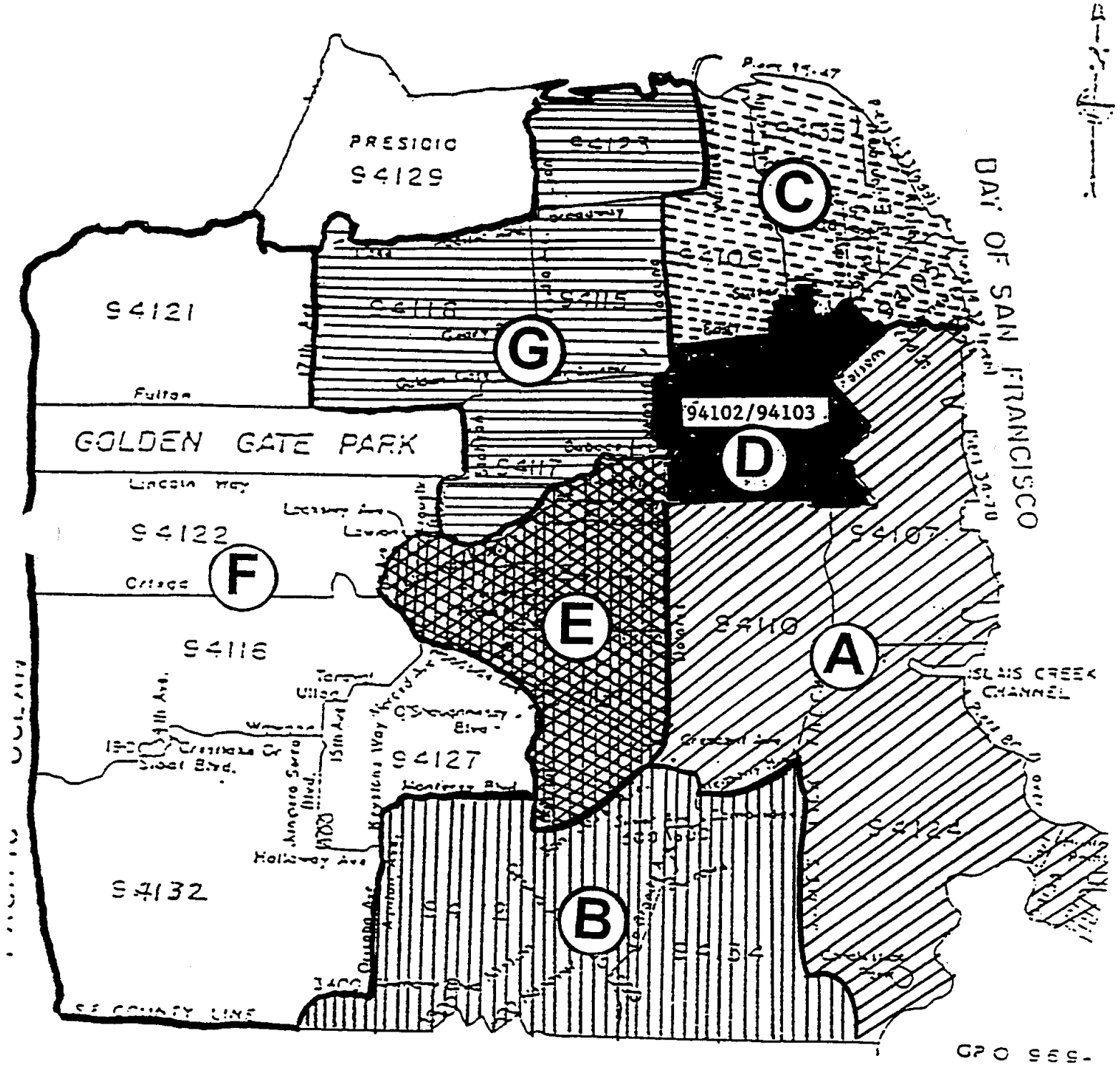
Zip code 94135 is the Hunter's Point **Shipyard.**

REVISED12/4/95

TAELE 3

A PARTIAL OF TOXIC SITES/FACTORS IN SAN FRANCISCO

ZIP CODES & DISTRICTS



REVISED *12/4/95*

TABLE 4

DISTRIBUTION OF ZIP CODES
by
SAN FRANCISCO HEIGHBORHOODS

	AREA	ZIP CODES
A	Bayview/Hunter's Point/ Potrero Hill/ Mission	94107,94110, 94124, 94135
B	Outer Mission/Visitation Valley	941 12.94 134
C	Chinatown/ Northbeach/Downtown	94104, 94105, 94108, 94 109, 9411 I, 94133
D	Civic Center/North of Market	94102, 94103
E	Castro/Noe Valley/Glen Park	94114,94131
F	Richmond/Sunset	941 16, 94 121, 94122, 94127, 94132
G	Western Addition/Pacific Heights/Marina/Haight	941 IS. 941 17,941 18,94123

TABLE 5

DEFINITIONS OF REPORTED TOXIC SITES/FACTORS

Bay Area Air Quality Management District Permitted Sties (BAAQMD)
Sites which are permitted by the BAAQMD which include gasoline stations, dry cleaners, auto repair facilities, wood working facilities, hospitals, coffee roasters, power plants and other industries

Toxic Air Contaminant Sites
Represents a subset of the BAAQMD permitted sites. These sites have been evaluated based on the specific contaminants known to be emitted and which exceed thresholds that would produce more than a de minimus level of risk.

Power Plants
Classified as a major discharger by EPA based on a formula that considers the effluent discharge rate and relative potential toxicity of the waste water. The 2 power plants in the City are the PG&E facilities in Potrero Hill and Hunters Point.

Acutely Hazardous Materials (AHM) Sites
Businesses are considered "AHM facilities if they store acutely hazardous materials in quantities greater than the threshold planning quantities (TPQ) established by the state. Release of an AHM has the potential to result in off-site consequences. examples of acutely hazardous materials facilities include swimming pools (chlorine gas) and refrigeration systems (ammonia).

Superfund Sites
Sites designated by the EPA under federal laws requiring clean-up under the oversight of the EPA. The 2 Superfund sites in the City are Bay Area Drum Co. arid the Hunters Point Shipyard.

Registered Hazardous Materials Facilities
A facility which is registered with DPH to handle and store hazardous materials in aggregate quantities of 55 gallons of liquid, 550 pounds of solids, or 200 cubic feet of compressed gasses or is a laboratory. The storage of hazardous materials, under normal operating conditions normally poses a minimal threat to the surrounding community. Registered facilities include a wide range of types of businesses including dry cleaners, auto body shops, plating shops, paint stores and laboratories such as UCSF.

Hazardous Waste Generators
Any business that generates hazardous waste which has been previously reported to the state. The generation of hazardous waste, under normal operating conditions normally poses a minimal threat to the surrounding community. Hazardous waste is not allowed to be stored on site for longer than 90 days. These types of businesses are generally similar to registered facilities, above. the types of hazardous waste include waste motor oil. spent photographic chemicals, etc.

Hazardous Waste On-site Treatment Facilities

A facility that is permitted or registered by the State to operate a treatment process for hazardous waste that is produced by the business. An example of these would be a silver recovery system at a photo processing shop.

LOP (Local Oversight Program) Sites

Sites that are known to be contaminated by petroleum products from leaky underground storage tanks. These are generally gas stations but also may include other types of tanks such as home heating oil tanks.

Underground Storage Tanks

Number of sites known to contain underground storage tanks. All of these contain petroleum products at establishments such as gas stations or high rise buildings.

Pre-1950 Housing Units

Those housing units generally accepted as posing the greatest threat to children due to the prevalence of lead-containing paint

TABLE *6*

TOXIC SITE /FACTOR MAPPING

BY STREET

FOR THE

BAYVIEW /HUNTERS POINT NEIGHBORHOOD

- Acutely Hazardous Materials Facilities
- Contaminated Underground Storage Tanks Sites
- Hazardous Waste Generators
- Underground Storage Tanks Facilities
- Registered Hazardous Materials Facilities
- Hazardous Waste On-site Treatment Facilities

Hunters Point/Bay View

Street Map

ACUTELY HAZARDOUS MATERIAL

Hunters Point/Bay View

Street Map

CONTAMINATED UNDERGROUND STORAGE TANKS SITES

Hunters Point/Bay View

Street Map

HAZARDOUS WASTE GENERATORS

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4

Hunters Point/Bay View
Street Map
ALL SITES WITH UNDERGROUND STORAGE TANKS

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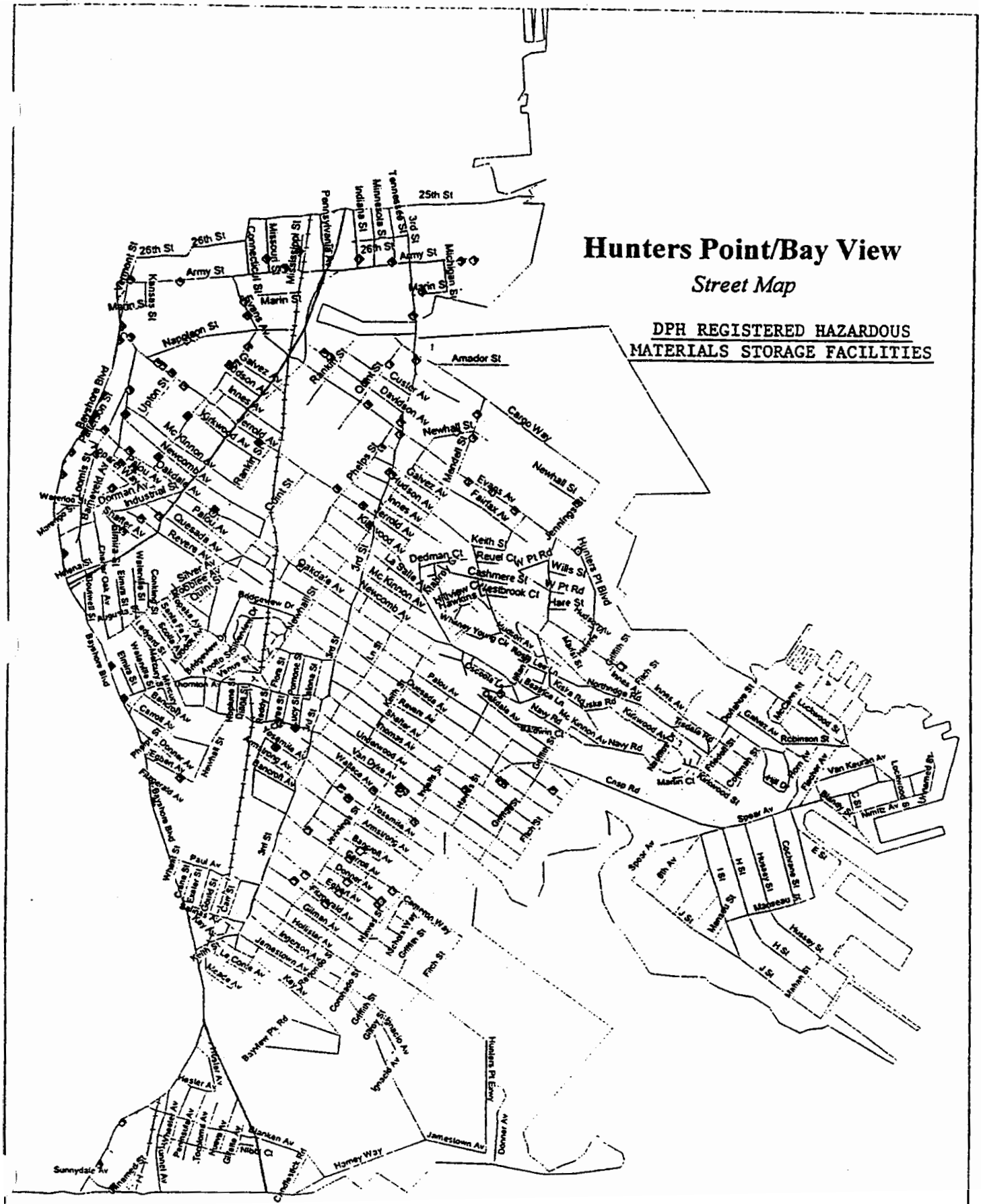
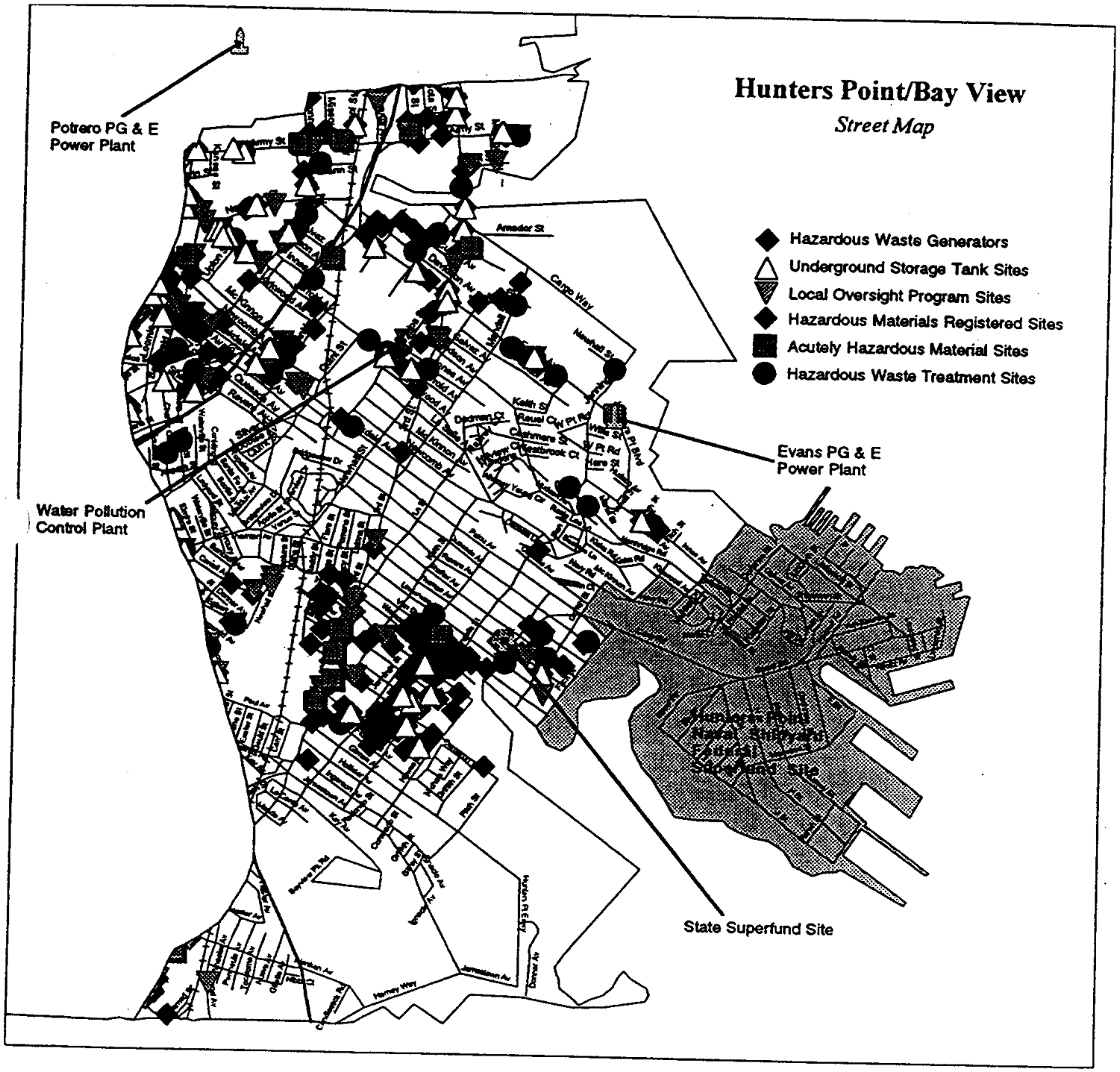

Hunters Point/Bay View
Street Map
DPH REGISTERED HAZARDOUS
MATERIALS STORAGE FACILITIES

Hunters Point/Bay View
Street Map
ONSITE TREATMENT
25th St
26th St
Army St
Marin St
Napoleon St
Amador St
Cargo Way
Newhall St
Evans Av
Galvez Av
Hudson Av
Innes Av
Jerrold Av
Kirkwood Av
Mc Kinnon Av
Newcomb Av
Oakdale Av
Palou Av
Quesada Av
Revere Av
Shafter Av
Thomas Av
Underwood Av
Van Dyke Av
Wallace Av
Yosemite Av
Armstrong Av
Bancroft Av
Carroll Av
Donner Av
Egbert Av
Fitzgerald Av
Gilman Av
Hollister Av
Ingerson Av
Jamestown Av
Key Av
Le Conte Av
Meade Av
Hester Av
Blanken Av
Sunnydale Av
Harney Way
3rd St
Bayshore Blvd
Industrial St
Keith St
Jennings St
Hunters Pt Blvd
Crisp Rd
Spear Av
Navy Rd
Van Keuren Av
Lockwood St
Robinson St
Hussey St
Cochrane St
Manseau St
Donner Av
Hunters Pt Expy


Hunters Point/Bay View
Street Map
Potrero PG & E Power Plant
Water Pollution Control Plant
Evans PG & E Power Plant
State Superfund Site
Hunters Point Naval Shipyard Federal Superfund Site
Hazardous Waste Generators
Underground Storage Tank Sites
Local Oversight Program Sites
Hazardous Materials Registered Sites
Acutely Hazardous Material Sites
Hazardous Waste Treatment Sites

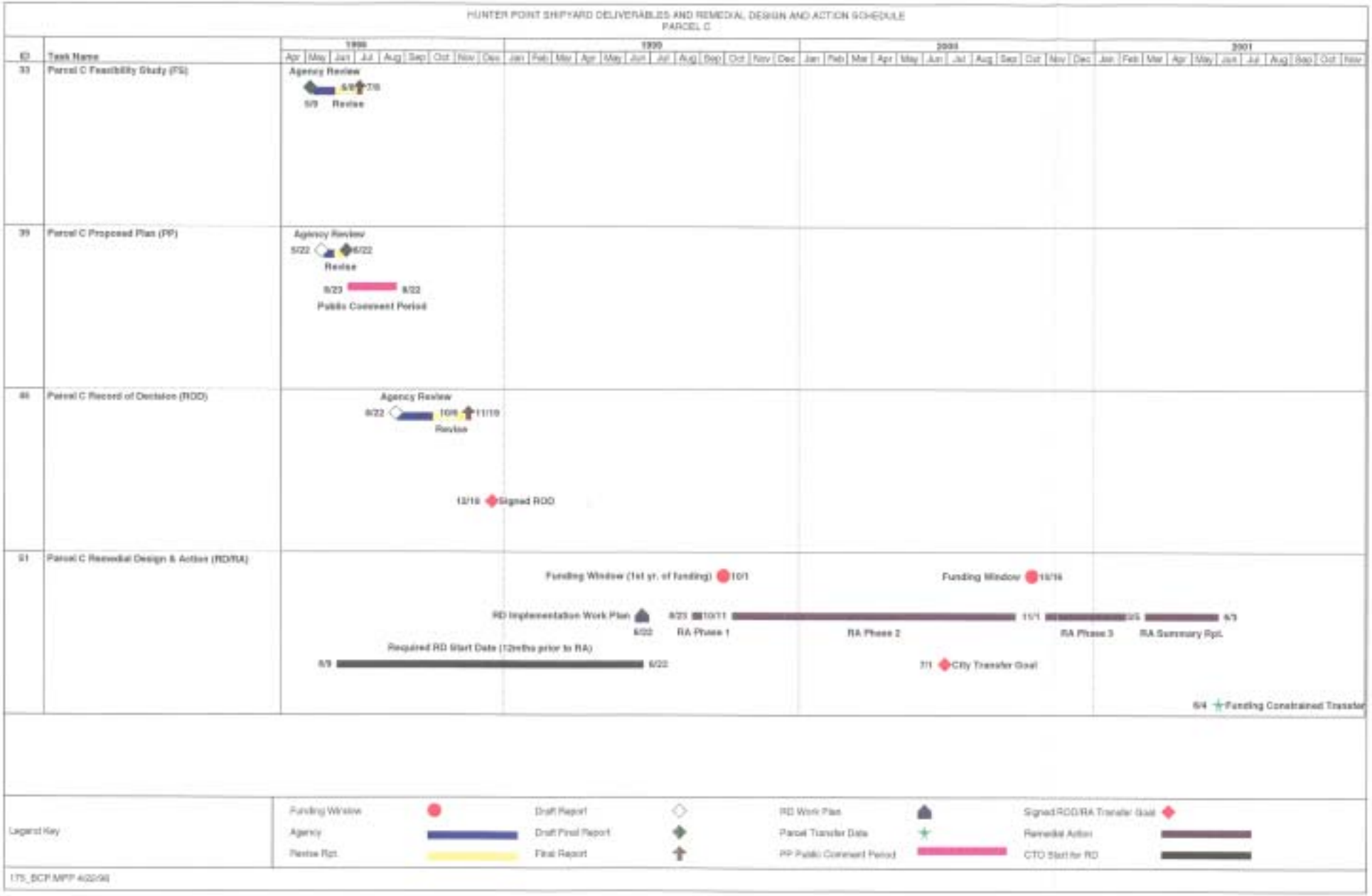
APPENDIX F

ENFORCEABLE RI/FS REPORT AND ROD SCHEDULES

(9 Pages)

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL B

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL C



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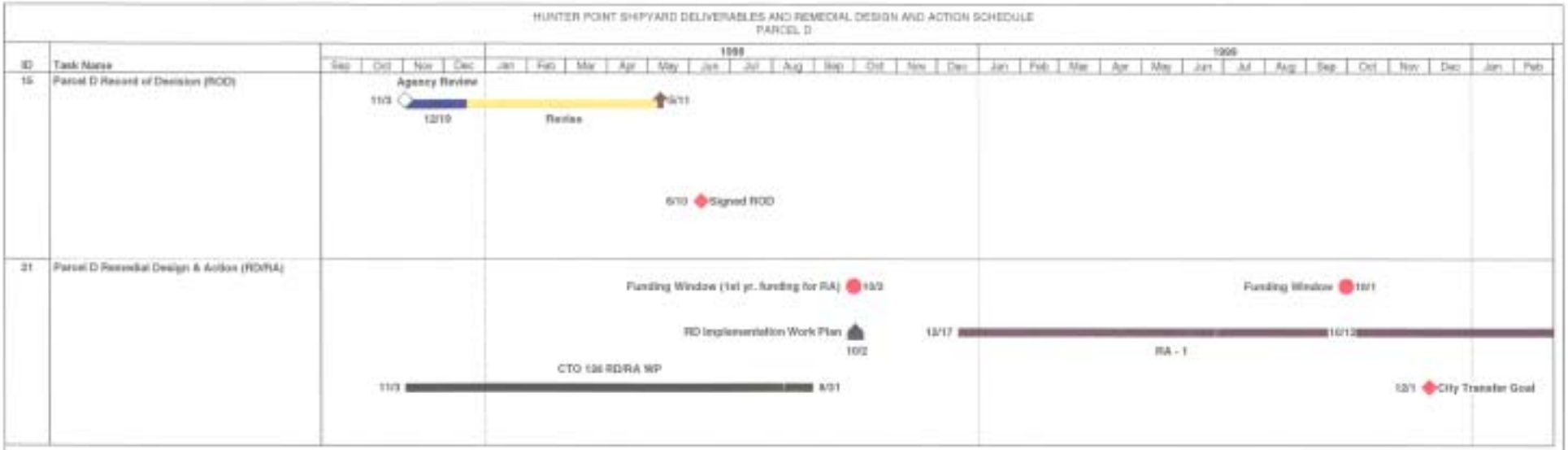
HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL D



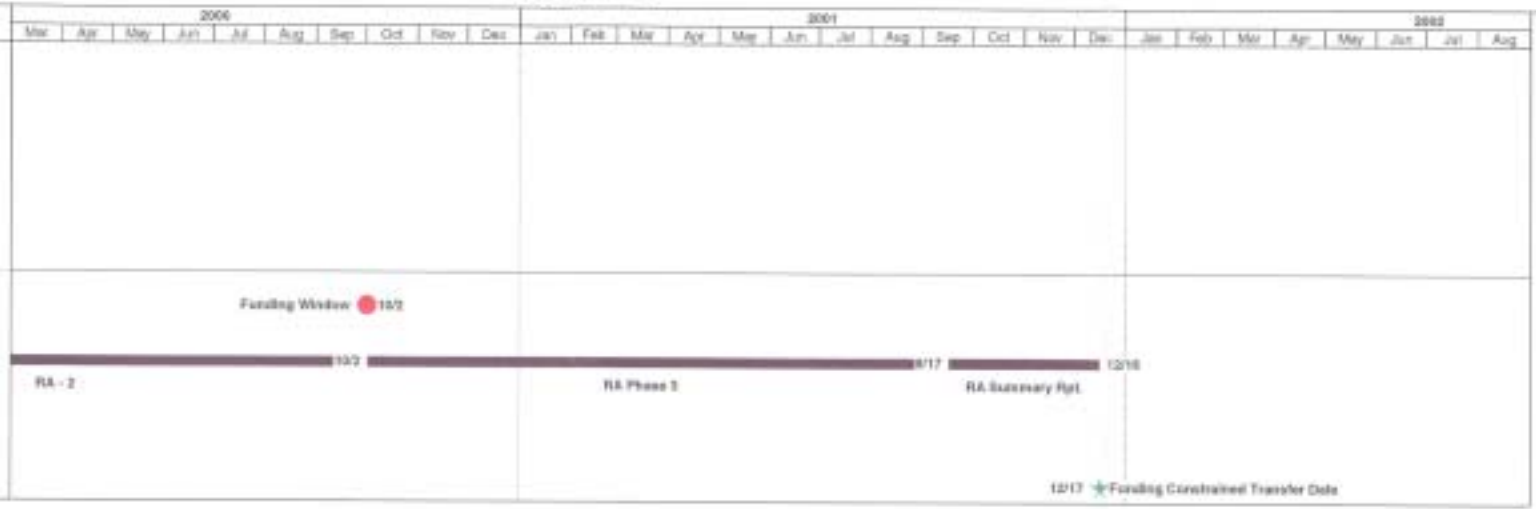
Legend Key

Funding Window
Agency
Revise Rpt
Draft Report
Draft Final Report
Final Report
RD Work Plan
Parcel Transfer Date
FP Public Comment Period
Signed ROD/RA Transfer Goal
Remedial Action
CTO Start for RD

175_SCP.MPP 4/22/98

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL D (Continued)

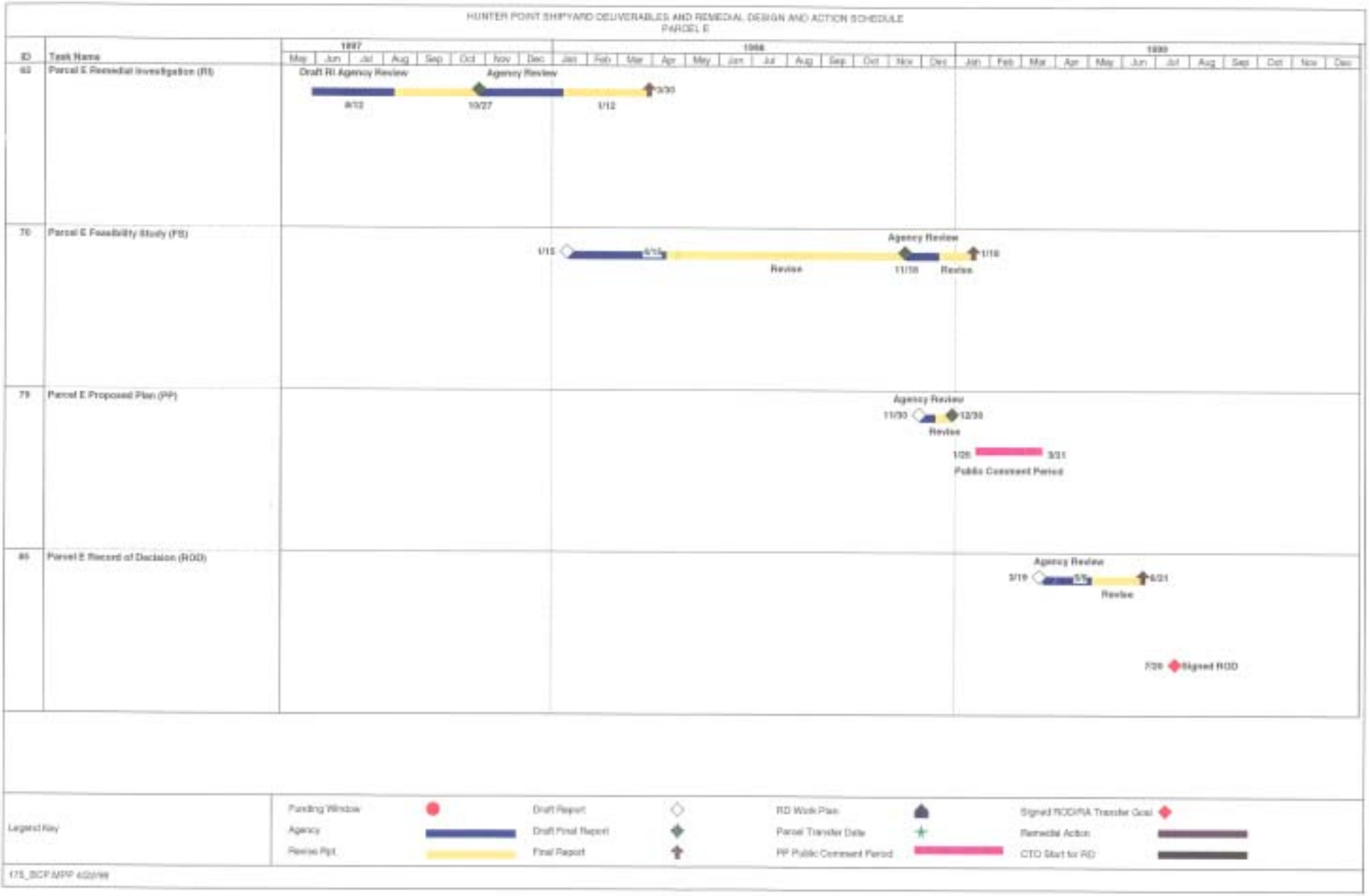
ID	Task Name
19	Parcel D Record of Decision (ROD)
21	Parcel D Remedial Design & Action (RD/RA)



Legend Key

Funding Window	Draft Report	RD Work Plan	Signed ROD/RA Transfer Goal
Agency	Draft Final Report	Parcel Transfer Date	Remedial Action
Review Rpt.	Final Report	FP Public Comment Period	CTO Start for RD

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL E



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HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL E (Continued)

Legend Key

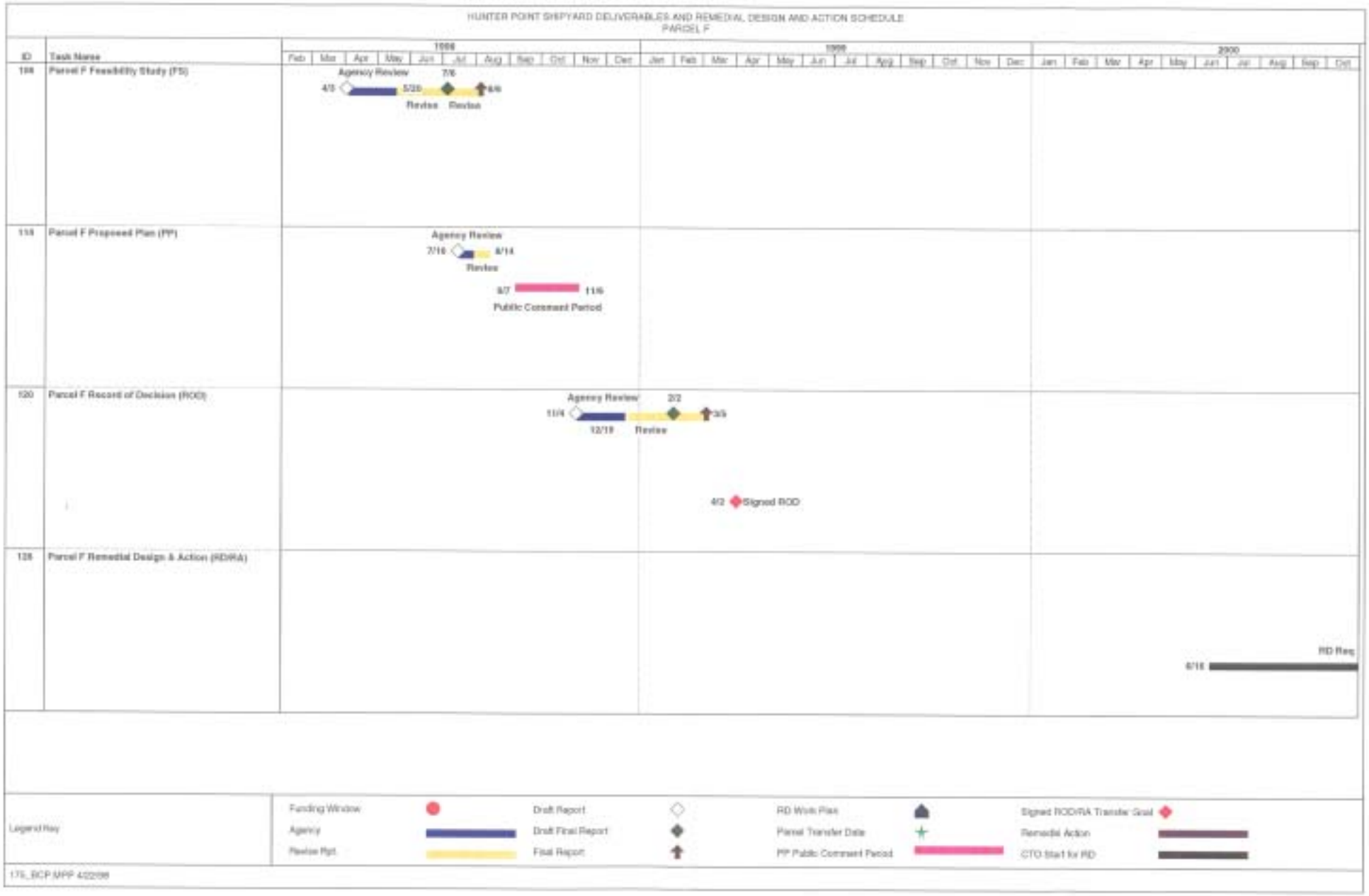
Funding Window
Agency
Revise Rpt
Draft Report
Draft Final Report
Final Report
RD Work Plan
Parcel Transfer Date
PP Public Covenant Period
Signed ROD/RA Transfer Goal
Remedial Action
CTO Stat for RD

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL E (Continued)

Legend Key

Funding Window
Agency
Review Rpt.
Draft Report
Draft Final Report
Final Report
RD Work Plan
Parcel Transfer Date
FP Public Comment Period
Signed ROD/RA Transfer Goal
Remedial Action
CTO Start for RD

HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL F



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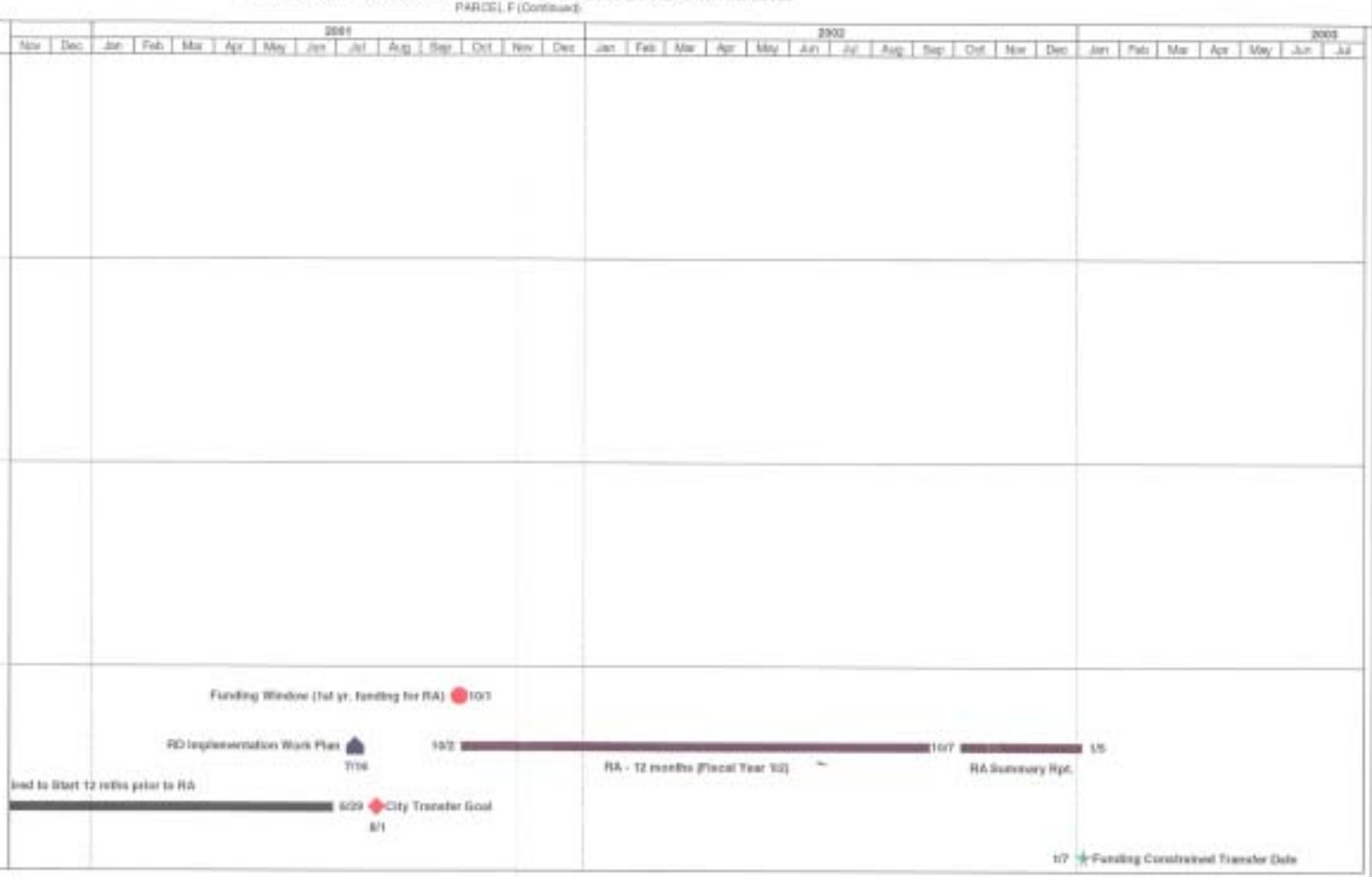
HUNTER POINT SHIPYARD DELIVERABLES AND REMEDIAL DESIGN AND ACTION SCHEDULE
PARCEL F (Continued)

ID	Task Name
106	Parcel F Feasibility Study (FS)
119	Parcel F Proposed Plan (PP)
120	Parcel F Record of Decision (ROD)
128	Parcel F Remedial Design & Action (RD/RA)



Legend Key

Funding Window		Draft Report		RD Work Plan	Signed ROD/RA Transfer Goal
Agency		Draft Final Report		Parcel Transfer Date	Remedial Action
Review Rpt.		Final Report		PP Public Comment Period	CTO Start for RD

APPENDIX G

DESCRIPTION OF INSTALLATION RESTORATION SITES AT HUNTER POINT SHIPYARD

(139 Pages)

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ABBREVIATIONS AND ACRONYMS

ACM	Asbestos-containing material
AEC	U.S. Atomic Energy Commission
AEMC	American Environmental Management Corporation
AOC	Area of concern
ASR	Alternative selection report
AST	Aboveground storage tank
Astoria Metals	Astoria Metals Corporation
bgs	Below ground surface
CAP	Corrective action plan
COC	Contaminants of concern
CPO	Chief Petty Officer
CTO	Contract task order
(d)	Demolished
DDD	Dichlorodiphenyldichloroethane
DDT	Dichlorodiphenyltrichloroethane
DNAPL	Dense nonaqueous-phase liquid
DoD	U.S. Department of Defense
EFA West	Engineering Field Activity West
EE	Exploratory excavation
EPA	U.S. Environmental Protection Agency
ERA	Ecological risk assessment
Ermico	Ermico Enterprises
FOST	Finding of suitability to transfer
FS	Feasibility study
HGAL	Hunters Point groundwater ambient level
HLA	Harding Lawson Associates
HPAL	Hunters Point ambient level
HPS	Hunters Point Shipyard
IDW	Investigation-derived waste
IR	Installation restoration
IT	IT Corporation
JAI	Jerrold Avenue Investigation
Navy	U.S. Department of the Navy
NBC	National Broadcasting Company

ABBREVIATIONS AND ACRONYMS (Continued)

NPWD	Navy Public Works Department
NRC	U.S. Nuclear Regulatory Commission
NRDL	Naval Radiological Defense Laboratories
OU	Operable unit
PA	Preliminary assessment
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCP	Pentachlorophenol
PP	Proposed plan
PRC	PRC Environmental Management, Inc.
RASO	Naval Radiological Affairs Support Office
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board
SA	Site assessment
SFDA	San Francisco District Attorney
SI	Site inspection
SVOC	Semivolatile organic compound
SWPCP	Southeast Water Pollution Control Plant
TCE	Trichloroethene
TPH	Total petroleum hydrocarbons
TPH-d	Total petroleum hydrocarbons as diesel
TPH-g	Total petroleum hydrocarbons as gasoline
TPH-mo	Total petroleum hydrocarbons as motor oil
Triple A	Triple A Machine Shop
TtEMI	Tetra Tech EM Inc.
UST	Underground storage tank
VOC	Volatile organic compound
Wagner	Wagner Construction Company
yd^3	Cubic yard

1.0 INTRODUCTION

Appendix G describes the installation restoration (IR) sites at Hunters Point Shipyard (HPS). Under caretaker status of Engineering Field Activity West (EFA West), Naval Facilities Engineering Command, HPS is a deactivated U.S. Department of the Navy (Navy) shipyard listed by the U.S. Department of Defense (DoD) in 1991 for closure. HPS is located in southeastern San Francisco, California, adjacent to San Francisco Bay and consists of 936 acres: 493 on land and 443 underwater.

To facilitate the transfer of HPS to the city, HPS was divided into six parcels: A, B, C, D, E, and F. These parcels are to be transferred to the City of San Francisco as each parcel becomes considered available for transfer. The following subsections describe the IR sites within each parcel and their current status.

2.0 PARCEL A INSTALLATION RESTORATION SITES

Parcel A is the first parcel that will be transferred to the City of San Francisco. It consists of about 90 acres of the central area of HPS, including a western adjacent area that connects by Crisp Avenue. It comprises IR/site inspection (SI) sites SI-19, SI-41, SI-43, portions of SI-45, SI-50, SI-51, IR-59, IR-59 Jerrold Avenue Investigation (JAI), and SI-77 (PRC Environmental Management, Inc. [PRC] 1993, 1995). The Record of Decision (ROD) for Parcel A was signed November 29, 1995 (Navy 1995). The next step in the transfer process was the preparation of the draft finding of suitability to transfer (FOST) (PRC 1996a). The FOST for Parcel A is expected to be finalized in 1998 and the transfer of Parcel A completed.

2.1 SI-19: BUILDING 901 (OFFICERS' CLUB)

2.1.1 Site Description

- Building 901 (Officers' Club) was a recreational facility for naval officers; no tenants are currently present at this site. Building 901 is on a knoll overlooking the southern and eastern portions of HPS; the building and surrounding parking area occupy slightly less than 1 acre. The Navy suspected that the landscaped parking medians southwest of Building 901 were filled in part with sandblast waste and oily materials. Also, common household chemicals were used at the site.

2.1.2 Current Status

- In support of the Parcel A accelerated schedule, the landscaped medians were excavated and the soil was disposed of during the SI performed at the site.
- The SI report for Parcel A was submitted to the Navy in 1993.
- The draft final remedial investigation (RI) report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.
- No further action for this site was recommended. The Parcel A ROD was signed November 29, 1995.
- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.2 SI-41: BUILDING 816 (CHLORINATION PLANT) AND BUILDING 818 (U.S. NAVAL RADIOLOGICAL DEFENSE LABORATORY HIGH VOLTAGE ACCELERATOR/LABORATORY)

2.2.1 Site Description

- SI-41 consists of Building 816 (the Naval Radiological Defense Laboratory [NRDL] High Voltage Accelerator/Laboratory), Building 818 (Chlorination Plant), the asphalt parking lot between the two buildings, and the surrounding area.
- Areas of concern at SI-41 consisted of a former drum storage area, the southwest corner of the parking lot, and the north side of the site.
- Building 816 housed a Van de Graaf unit and was surveyed in 1993. The Naval Radiological Affairs Support Office (RASO) has determined that no further surveys are required.
- Building 818 is a small structure on a concrete foundation. Historically, the building was used for water chlorination.

2.2.2 Current Status

- The preliminary assessment (PA)/SI and radiation investigation for the site have been completed.
- The SI report for Parcel A was submitted to the Navy in 1993.
- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- No further action was recommended at this site. The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.3 SI-43: BUILDING 906 (GARDENING TOOL HOUSE)

2.3.1 Site Description

- Building 906 (Gardening Tool House) was demolished in 1993. It was formerly used for storage and repair of gardening and landscaping tools and equipment, and for pesticide mixing. Rubble that was dumped around the edge of the building was removed and disposed of off site. Signs in the dirt-floored room indicated that pesticides and fertilizers were stored and mixed in the building.

- The primary concern was soil contamination. Pesticide-contaminated soil was removed.

2.3.2 Current Status

- The PA/SI for the site has been completed.

- The SI report for Parcel A was submitted to the Navy in 1993.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- A finding of no further action for this site was proposed. The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.4 SI-45: STEAM LINES

2.4.1 Site Description

- The steam line system at HPS spans the entire shipyard and was used primarily to conduct steam to heat buildings and ships docked at the facility, and to warm oil lines to facilitate oil flow through those lines.

- The steam line system was constructed approximately 40 years ago and is no longer in use. Pipelines comprising the system are often covered with lagging that contains asbestos and are typically contained within concrete trenches covered by pre-cast concrete slabs.

- Maintenance access points, known as "utilidors," are located approximately every 200 to 400 feet along the system.

- Generally, the utilidors consist of 4-inch-wide steel slats placed side-by-side over the trench opening.

- No available historical information indicates that waste oil was transported in any of the Parcel A steam lines, which was confirmed by the SI results.

2.4.2 Current Status

- The PA/SI for the site has been completed.

- The SI report for Parcel A was submitted to the Navy in 1993.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- The investigation has been concluded. No further action was recommended for the Parcel A steam lines.

- A no further action recommendation at Parcel A (including SI-45) was proposed. The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.5 SI-50: STORM DRAINS AND SANITARY SEWERS

2.5.1 Site Description

- The sanitary sewer and storm drain systems at the HPS facility were originally designed and constructed as a combined sanitary sewer and storm drain system.

- Separation of the combined system at HPS began in 1958 and was largely completed by 1976. Some interconnections between the two systems were corrected later in 1993 and 1994.

Sanitary Sewer System

- The overall sanitary sewer system at HPS was expanded from 1942 through 1958 and is constructed of iron, concrete, brick, and vitrified clay pipe.

- Sewage collected from throughout the system flows to Pump Station A, where it is then pumped through a force main to the west end of Crisp Avenue, where it leaves HPS and enters the San Francisco sanitary sewer system.

- Based on limited evidence of contamination throughout the Parcel A sanitary sewers, the fact that land use within Parcel A has been nonindustrial, and the relatively good physical condition of the system in this parcel, it appears that there is low potential for substantial contamination associated with the sanitary sewers.

Storm Drains

- The storm drains discharge into the Bay at five locations.

- There is little evidence of sediment accumulation in Parcel A storm drains. Analytical results indicate that the Parcel A storm drain system does not contain substantial contamination.

2.5.2 Current Status

- The PA/SI for the site has been completed.

- The SI report for Parcel A was submitted to the Navy in 1993.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- A no further action recommendation was proposed for the Parcel A utilities. The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.6 SI-51: TRANSFORMER LOCATIONS

2.6.1 Site Description

- SI-51 consists of buildings or areas throughout HPS that formerly contained one or more transformers containing polychlorinated biphenyls (PCB).

- Although historical data do not indicate the presence of transformers in Parcel A, one former transformer location and nine current transformers were identified.

- Inspections of these transformers indicated that PCB oils had apparently not leaked into the surrounding environment.

2.6.2 Current Status

- The PA/SI for the site has been completed.

- The SI report for Parcel A was submitted to the Navy in 1993.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- No further action for the Parcel A transformer locations was recommended at the PA/SI stage.

- A no further action recommendation for SI-51 at Parcel A was recommended. The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.7 IR-59: GROUNDWATER INVESTIGATION

2.7.1 Site Description

- Site IR-59 consisted of the parcel-wide groundwater investigation of Parcel A.

- Groundwater occurrence is sporadic both laterally and vertically, and does not meet the State of California's definition of a drinking water source (Resolution No. 88-63).

2.7.2 Current Status

- Investigation results have not identified any contaminants of concern (COC). Additional sampling was performed in the parking lot spring in the lowland area of Parcel A. No significant contamination was found.

- In May 1995, the California Regional Water Quality Control Board (RWQCB) and the City of San Francisco concurred with the Navy's technical evaluation that the Parcel A groundwater is not a drinking water source.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995.

- The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.8 IR-59 JERROLD AVENUE INVESTIGATION: UPLAND DICHLORODIPHENYLTRICHLOROETHANE INVESTIGATION

2.8.1 Site Description

- The IR-59 JAI entailed investigating the occurrence of sandblast waste and pesticides in a residential lot 150 feet northeast of and downslope from SI-43.

2.8.2 Current Status

- Small quantities of sandblast waste were removed from a utility trench. The entire sanitary sewer line at IR-59 JAI was dismantled.

- Dichlorodiphenyltrichloroethane (DDT) was found in the eastern portion of IR-59 JAI, predominantly near the ground surface.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995. No further action was proposed for this site.

- The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1998.

2.9 SI-77: TANK S-812

2.9.1 Site Description

- Tank S-812 was underneath an asphalt parking lot approximately 20 feet east of Building 813. The steel underground storage tank (UST) was installed in 1976 and used to store fuel oil for a boiler in Building 813. Based on a visual estimate after removal, the volume of the UST was estimated to be between 18,000 and 20,000 gallons.

- Field observations during removal work did not indicate any contamination.

- Soil samples collected during removal work at 8 and 9 feet below ground surface (bgs) identified low levels of volatile organic compounds (VOC), semivolatile organic compounds (SVOC), diesel, and metal contaminants above the Hunters Point ambient levels (HPAL). A sample of groundwater, encountered at 9.5 feet bgs, identified minor levels of VOCs and metal contaminants above the HPALs.

- Subsequent field work to verify minor levels of VOCs in groundwater identified bedrock in three locations. VOCs in the one groundwater sample collected in the subsequent investigation were reported as nondetected.

2.9.2 Current Status

- The UST was removed in 1991 and media sampling was performed during the Phase I UST work.

- In 1993, additional fieldwork was conducted to verify VOCs in groundwater. No VOC contamination was found, and this fact was reported in the Parcel A SI report. The Parcel A SI report recommended no further action.

- The draft final RI report for the Parcel A sites was submitted to the regulatory agencies September 22, 1995. No further action was recommended in the Parcel A RI report.

- The Parcel A ROD was signed November 29, 1995.

- Parcel A is expected to be transferred to the City of San Francisco in 1996.

3.0 PARCEL B INSTALLATION RESTORATION SITES

Parcel B will be the second parcel transferred to the City of San Francisco. It consists of approximately 66 acres of northeast shoreline and lowland coast. Parcel B is comprised of sites IR-06, IR-07, IR-10, IR-18, IR-20, IR-23, IR-24, IR-26, IR-42, IR-46, IR-60, IR-61, and IR-62, as well as SI-31 and portions of SI-45, IR-50, and IR-51. Appendix F contains the enforceable schedules for the delivery of the parcel-wide RI/feasibility study (FS) and decision documents (Harding Lawson Associates [HLA] 1994a; IT Corporation [IT] 1997a, 1997b; PRC 1996b, 1996c). The Parcel B ROD was signed November 26, 1997 (Navy 1997).

3.1 IR-06: BUILDINGS 111(d), 112(d), AND TANK FARM(d)

3.1.1 Site Description

Buildings 111(d) and 112(d) (Note that "(d)" means demolished)

- Buildings 111(d) and 112(d) were lubrication oil and diesel oil pumphouses.

Tank Farm(d)

- All 11 aboveground storage tanks (AST) were removed from IR-06: one 210,000-gallon tank, nine 12,000-gallon tanks, and one 3,000-gallon tank.

- The tank farm, constructed in 1942, was used by the Navy until 1974 to store diesel fuel and lubrication oil. PCBs have been identified in soil samples.

- The site was used by Triple A Machine Shop (Triple A) from 1976 to 1986 to store stoddard solvents in two 12,000-gallon tanks.

- Remediation of shallow soil mixed with petroleum products, PCBs, and lead was conducted in September 1997.

- Diesel oil reportedly spilled in the early 1940s when the contents of a 286-barrel (about 12,000 gallons) tank overflowed the berm. The spilled oil was recovered and taken to the oil reclamation ponds at IR-03 in Parcel E.

- Interim remediation was proposed in the operable unit (OU) II alternative selection report (ASR). Groundwater and soil remedial units for interim action were identified. The Navy issued several contract task orders (CTO) to initiate interim remediation. The engineering evaluation/cost analysis for the cleanup of the contaminated groundwater plume has been funded. A treatability study for bioremediation of soil is in progress.

- The Navy excavated approximately 5,400 yd^3 of contaminated soil at the former tank farm. The main COCs were organic compounds, metals, and petroleum hydrocarbons. Soil was either disposed of off site (approximately 2,600 yd^3) or treated on site using bioremediation (approximately 2,800 yd^3) as part of the Parcel B treatability study. This removal action is complete.

3.1.2 Current Status

- Previous field work for the site, along with proposed interim remedial actions, were reported in the OU II ASR, submitted to the regulatory agencies in April 1993.

- A proposal for additional field work to fill the remaining data gaps was submitted to the regulatory agencies October 12, 1993.

- The draft final Parcel B RI report, submitted to the regulatory agencies June 3, 1996, reported the results of the RI.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B proposed plan (PP) report was submitted to the regulatory agencies October 16, 1996.

- Exploratory excavations (EE) were completed in early 1997. The draft EE report was submitted to the regulatory agencies February 1997.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial documents were submitted to the regulatory agencies March 23, 1998.

3.1.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Removal of steam pipelines
- Groundwater monitoring
- Removal of the fuel pipelines

3.2 IR-07: SUBBASE AREA

3.2.1 Site Description

- The Subbase Area is composed of approximately 9 acres in the northernmost part of HPS.

- The site has been divided into three areas: the Painting Area (0.33 acre), Sandblast Fill Area (3 acres), and the Additional Area (6 acres). IR-07 has naturally occurring radioactive materials present in the soil.

Painting Area – Past activities associated with the painting of submarine superstructures may have released metals or petroleum hydrocarbons in this area during sandblasting operations.

Sandblast Fill Area – Sandblast waste generated in either the sandblast area or the painting area may have been disposed of in this area. Suspected contaminants associated with sandblast waste include metals from paint chips.

Additional Area – Portions of this area may have been used for the disposal of sandblast waste generated in the sandblast area or painting area. Waste liquids and oils from the adjacent Triple A site (IR-18) may have been disposed of on the ground surface.

3.2.2 Current Status

- Previous field work for the site was reported in the OU IV ASR in May 1993.
- The site has been screened for radiation contamination, and no further radiation investigation is required. U.S. Environmental Protection Agency's (EPA) National Air and Radiological Environmental Laboratory concurred with the Navy's position that the elevated radiation counts found during site screening are due to naturally occurring radiation sources. RASO has cleared this site as a radiation area based on petrographic and gamma spectroscopy analysis of the soil. The soil used as fill in this site has a higher concentration of naturally occurring radium-226 than the rest of the soil at HPS. EPA concurred with this conclusion. No further action has been recommended for this site due to radiological issues.
- Previous work reported in the OU IV ASR was incorporated into the Parcel B RI/FS report.
- The draft final Parcel B RI report, submitted to the regulatory agencies June 3, 1996, reported the results of the RI.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.2.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Storm drain system rehabilitation
- Groundwater monitoring
- Removal of the steam pipelines

3.3 IR-10: BUILDING 123 (BATTERY AND ELECTROPLATING SHOP)

3.3.1 Site Description

- Building 123 was used for electroplating and battery storage between 1944 and 1974.
- Waste acids containing cyanide, chromates, and metals were generated by plating operations in Building 123 sanitary sewer storm drains. Cyanide wastes were directly disposed of in the landfill at HPS (IR-01).
- An estimated 250,000 gallons of spent electrolyte fluid contaminated with metals was discharged to the floor drains in Building 123.

3.3.2 Current Status

- Previous field work for the site was summarized in the OU II ASR. No interim action was recommended in the OU II ASR.
- Additional field work was proposed to fill data gaps, and a plan was submitted to the agencies on October 12, 1993. VOCs were detected in soil and groundwater at IR-10.
- The results of the RI field work, along with previous investigations, were reported in the Parcel B RI report. The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.3.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

3.4 IR-18: WASTE OIL DISPOSAL SITE AND UNNUMBERED TRIPLE A SITES

3.4.1 Site Description

- IR-18 is a 3.6-acre parking lot where Triple A reportedly disposed of 50,000 to 100,000 gallons of waste oil on the ground. The area was subsequently paved over.
- The contaminant of potential concern at this site included radium in fill materials. Naturally occurring radioactive materials are present in the soil.

3.4.2 Current Status

- The RI field work for the site was included in the Group 6 investigation completed in 1994.
- The results from the RI field work were presented to the regulatory agencies on January 28, 1994. Additional work was recommended and performed under CTO 276.
- This site has been screened for radioactive contamination, and no further investigation is required. RASO has cleared this site as a radiation area based on petrographic and gamma spectroscopy analysis of the soil. The soil used as fill in this site has a higher concentration of naturally occurring radium-226 than the rest of the soil at HPS. EPA concurred with this conclusion. No further action has been recommended for this site based on radiological issues.
- The RI field work and results was incorporated into the Parcel B report. The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.4.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Groundwater monitoring

3.5 IR-20: BUILDING 156 (RUBBER SHOP)

3.5.1 Site Description

- IR-20 is a paved area of slightly less than 0.5 acre in the north corner of HPS that includes Building 156, which was a rubber shop.
- The southwest portion of the site was previously used by Morgan Chemical Company as a storage yard for a variety of chemicals and reclaimed oil.
- The asphalt surface of the yard has been observed to be cracked and stained. A sump inside Building 156 contained an unknown fluid with a thin layer of sludge at the bottom of the sump.
- Inspection of aerial photographs revealed a pond-like feature that existed from 1981 through 1986; its origin and use are unknown. Subsequent RI field work at Site IR-20 showed that the pond resulted from a plugged storm drain catch basin.

3.5.2 Current Status

- The RI field work for this site is included in the Group 6 investigation.

- The results of the Group 6 RI field work were presented in a meeting with the regulatory agencies on January 28, 1994. VOC, PCB, and gasoline contamination were found in soil, and metal contamination was found in shallow soil. Additional work was recommended for the site.

- The results of the RI work for the site was incorporated into the Parcel B RI report. The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.5.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Removal of the steam pipelines
- Storm drain system rehabilitation
- Groundwater monitoring

3.6 IR-23: BUILDING 119(d) (CHIEF PETTY OFFICER'S BARRACKS), BUILDING 121 (NAVY CIVILIAN TRAINING CENTER), BUILDING 144 (LAVATORIES), BUILDING 145 (SALTWATER PUMPHOUSE), BUILDING 146 (PHOTOGRAPH DEVELOPMENT LABORATORY), BUILDING 161(d) (MAINTENANCE SERVICE CENTER), BUILDING 162(d) (PAINT SHOP), AND TANK S-136

3.6.1 Site Description

Building 119(d) (Chief Petty Officer Barracks)

- Building 119 is demolished. It was the Chief Petty Officer (CPO) Barracks.
- EE-02 (formerly EE-09) is located in the area of demolished Building 119. Approximately 540 yd^3 of contaminated soil was excavated. The COCs were beryllium, vanadium, SVOCs, and total petroleum hydrocarbons (TPH) as motor oil (-mo). The contaminated soil was disposed of at a Class II landfill.

Building 121 (Navy Civilian Training Center) and Building 144 (Lavatories)

- Building 121 was used as the Navy's Civilian Training Center. There are no reported activities at this building that may have resulted in releases of hazardous substances to the environment. Three transformers were formerly located between Buildings 121 and 122.
- Building 144 is still at the site and contains lavatories. This building is not being used.
- EE-01 (formerly EE-09) is located between Buildings 121 and 146. Nineteen yd^3 of contaminated soil was excavated. The COCs were arsenic, chromium, lead, and 4,4'-DDT. The contaminated soil was disposed of at a Class I landfill.

Building 145 (Saltwater Pumphouse)

- Building 145 is site assessment (SA) site 77.
- Building 145 is one of the two saltwater pumphouses. It was used to pump sea water to the hydrant system for fire fighting.
- The primary concerns are lubricating and hydraulic pump oils.
- Chemicals detected at Building 145 indicate a point source release. Further investigation is recommended at this site after sump removal. The SA report for Building 145 was completed April 5, 1994.

Building 146 (Photograph Development Laboratory)

- Building 146 is currently unoccupied. It was formerly used as a photography development laboratory and as a radioactive waste disposal/drum storage area. It has a lead-lined storage vault that was used for storing shipyard x-ray sources, formerly used in nondestructive testing. The building was surveyed prior to decommissioning. RASO has indicated that surveys are not required.

- The primary concerns are two petroleum ASTs and paint resins in soil surrounding the building.

- Several fume hoods on the first and second floors indicate historical chemical use. A fuel pump observed at the north exterior corner indicated the probable presence of a UST; however, investigations revealed that no UST was present at the site. Two ASTs, assumed to have stored diesel and heating oil, are located in secondary containment at the northeast corner. Dispensing hoses from these tanks, however, are not contained, and spillage to an adjacent storm drain is apparent.

- EE-03 (formerly EE-10) is located on the northeast corner of Building 146. Two hundred ninety-five yd^3 of contaminated soil was excavated. The COCs were metals, SVOCs, and TPH-mo. The contaminated soil was disposed of at a Class II landfill.

- Although the sample collected beneath the AST dispensing hose does not indicate a point source release, visual observations beneath the actual tanks indicated staining on the ground surface. This area was remediated during the EE removal action performed in 1996. Building 146 has also been screened for radioactive contamination, and no further investigation is required.

Building 161(d) (Maintenance Service Center)

- This building was formerly used as a maintenance service center.

- The building site is a soil-covered area similar to surrounding areas. No indication of spills or releases was observed. The building's former use suggests the possible previous use and storage of hazardous materials.

- Additional work was recommended at Building 161 to assess the apparent presence of vanadium and polynuclear aromatic hydrocarbons (PAH); this work was conducted in 1994 under CTO 276.

Building 162(d) (Paint Shop)

- Building 162 was a former paint storage shed (S-71). The building is no longer present, and the site is now a boat ramp. Soil formerly beneath the building has been removed; therefore, no further action is recommended.

Tank S-136

- UST S-136 was a 750-gallon fuel oil UST located on the west side of Lockwood Street near the east end of Building 118 (labeled "COMSUB BOQ" and Mess Hall). Information concerning the dates of installation and abandonment of the UST is unavailable.

- During the removal of the UST, associated piping was traced and removed. Field observations during removal work indicated corrosion holes on the UST.

- Soil samples were collected during removal work at 7 feet bgs. Groundwater was not encountered. Analytical results identified low levels of VOCs, PCBs, diesel, and gasoline; high levels of SVOCs; and metal contaminants above the HPALs in soil.

- RI field work was completed for Tank S-136, and the results of the investigation were integrated with site IR-23 and reported in the Parcel B RI report.

3.6.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- Exploratory excavations proposed as an interim removal action for three areas in IR-23 were completed in 1996. The draft EE report was submitted to the regulatory agencies in February 1997.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.6.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Removal of the steam and fuel pipelines
- Storm drain system rehabilitation
- Groundwater monitoring

3.7 IR-24: BUILDING 124(d) (ACID MIXING PLANT), BUILDING 125 (SUBMARINE CAFETERIA), AND BUILDINGS 128 AND 130 (MACHINE SHOPS)

3.7.1 Site Description

- Buildings 124, 125, 128, and 130, and the asphalt-paved areas adjacent to them, compose the investigation area for IR-24. IR-24 is a 10-acre rectangular site in the north half of HPS, immediately east/northeast of IR-10 and adjacent to San Francisco Bay.

Building 124(d) (Acid Mixing Plant)

- Building 124 was an acid mixing plant where five ASTs containing sulfuric acid and electrolytes were reportedly used. Building 124 was located between Building 123 (IR-10) and Building 134 (IR-25). Building 124 was demolished, and the ASTs were removed between 1979 to 1981.

Building 125 (Submarine Cafeteria)

- Building 125 was used as a restaurant, called the Submarine Cafeteria. This restaurant is no longer in operation. The building is currently leased to Tad Bridenthal, a cabinet maker, who in turn subleases several areas to other artisans. Two transformers are located just northeast of the building.

Buildings 128 and 130 (Machine Shops)

- The San Francisco Police Department currently uses Building 128 for storage. Two transformers were present in a room in the east corner of the building; a sign on the door to the room reads "contains PCBs." Previously inventoried chemicals include oils, solvents, corrosives, and hydrocarbons.

- Building 130 was formerly occupied by Engel Engineering and Protective Finishes Company and is currently unoccupied. Various chemicals were stored at the site, and poor housekeeping practices were evident. Past inventoried chemicals include oils, solvents, paints, VOCs, methyl ethyl ketone, toluene, and hydrocarbons. Two sumps are located in the building. This building has also been used to store investigation-derived waste (IDW) generated for activities associated with the Installation Restoration Program.

3.7.2 Current Status

- The PA/SI field work for the site has been completed.
- The PA/SI results and RI recommendations for the site were submitted to the regulatory agencies July 27, 1993.
- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.7.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Removal of the steam and fuel pipelines
- Storm drain system rehabilitation
- Groundwater monitoring

3.8 IR-26: BUILDING 157 (NONDESTRUCTIVE TESTING AND Q&RA INDUSTRIAL LABORATORIES - METAL FABRICATION BRANCH), AND AREA XIV (BUILDINGS 140, 141, AND 142A - NORTH OF DRY DOCK 3)

3.8.1 Site Description

Building 157 (Q&RA Industrial Laboratories - Metal Fabrication Branch)

- Building 157 is currently not in use; however, it was formerly used for fabrication of metal products, welding, and as a nondestructive testing laboratory. The interior of the building is covered by a concrete and asphalt floor. A work bench area with a small fume hood is on the southeast wall.

- Stained areas were observed on the soil floor of Building 157, on soil beneath an overturned drum outside of the building, and on a portion of the storm drain system that included a catch basin inside the building.

- EE-04 (formerly EE-14) is located at and around Building 157. Approximately 315 yd^3 of contaminated soil was excavated. The COCs were chromium, TPH as diesel (-d), TPH as gasoline (-g), and TPH-mo. The contaminated soil was disposed of at a Class II landfill.

Area XIV (Buildings 140, 141, and 142A [d])

- Area XIV, which is a large material staging area adjacent to Building 157 and north of Dry Dock 3, is currently not in use. However, it was formerly used for carpentry, painting, dry-dock work, sandblasting, and repair. Area XIV includes Building 141, Dock Shipwright's Shop S-64, the area where Building 142A once stood, an air raid shelter, and Building 140, the pumphouse for Dry Dock 3.

- In Area XIV, sandblast material was observed at several locations. Storm drains likely contain sandblast material and other sediments. A pressure cylinder and an associated UST, possibly used for wood treatment, are adjacent to Building 141. Debris suspected of containing asbestos materials is present along the shoreline. The primary concerns are drums containing oil, a possible UST, and sandblast material and asbestos at Area XIV.

- EE-05 (formerly EE-15) is located on the south side of Building 141. Approximately 501 yd^3 of contaminated soil was excavated. The COCs were arsenic, beryllium, lead, manganese, mercury, SVOCs, and TPH-mo. The contaminated soil was disposed of in a Class I landfill.

3.8.2 Current Status

- The PA/SI field work for the site has been completed.

- The PA/SI results and RI recommendations for the site were submitted to the regulatory agencies July 27, 1993.

- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- Exploratory excavation interim removal actions of shallow soil were completed at two locations at IR-26 in 1996. The draft EE report was submitted to the regulatory agencies in February 1997.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.8.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

3.9 SI-31: BUILDING 114(d) (OFFICE BUILDING)

3.9.1 Site Description

- Building 114 (office building) has been demolished, and the area it occupied is used for recreational purposes. The area was covered by sand that appears to be sandblasting residue. There is no evidence of radioactive materials used or radiological work performed in this building. Surveys are not required.

- The primary concern was the content of sandblast material placed at the site. The sandblast waste was removed from SI-31 in 1994 as part of a spent sandblast waste characterization performed in preparation of a treatability study for recycling sandblast waste as asphalt aggregate.

3.9.2 Current Status

- The PA/SI for this site has been completed.
- The SI results and RI recommendations for the site were submitted to the regulatory agencies July 27, 1993.
- The sandblast residue was screened for radiation, with no significant results.
- No further chemical investigation has been recommended.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.9.3 Proposed Cleanup Action

- No cleanup action required.

3.10 IR-42: BUILDING 109 (POLICE STATION) AND BUILDING 113/113A (TUG AND SUBMARINE MAINTENANCE SHOP)

3.10.1 Site Description

Building 109 (Police Station)

- Building 109 is currently inactive and was historically used as a police station.
- No evidence of hazardous materials was observed.

- The primary concern in this building is an alleged 100-gallon oil-water mixture reservoir. However, the PA conducted at the site noted no evidence of an oil-water mixture reservoir.

Building 113/113A (Tug and Submarine Maintenance Shop)

- Building 113/113A was the tug and submarine maintenance and salvage shop. Building 113/113A was also a former shipyard analytical laboratory and radioactive storage building.

- Historically, the building was used as a machine shop, a torpedo maintenance shop, and an electrical substation. It was also used as office space. Currently, a portion is used as a storage area, while the remainder remains vacant.

- The primary concerns are oil and grease contamination, pitted floor stains, and a possible buried tank.

- RASO has determined that surveys are not required.

- Building 113A was redesignated Building 114 and currently occupied by Smith-Emery.

3.10.2 Current Status

- No further action was recommended for Building 109. Building 113/113A has been screened for radiation contamination, and no further screening is required.

- The PA/SI field work for the site has been completed.

- The PA/SI results and RI recommendations for the site were submitted to the regulatory agencies July 27, 1993**.**

- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.10.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

3.11 SI-45: STEAM LINES

3.11.1 Site Description

- The steam line system at HPS spans the entire shipyard and was used to provide steam to heat buildings and ships docked at the facility, and to warm oil lines to facilitate oil flow through those lines.
- The steam line system was constructed approximately 40 years ago and is no longer in use. Pipelines comprising the system are often covered with lagging that contains asbestos and are typically contained within concrete trenches covered by pre-cast concrete slabs.
- Maintenance access points, referred to as "utilidors," are located approximately every 200 to 400 feet along the system.
- Generally, the utilidors consist of 4-inch-wide steel slats placed side-by-side over the trench opening.

3.11.2 Current Status

- The PA/SI field work for the site has been completed. There was no evidence of oil contamination in the Parcel B lines, nor was there evidence of a release of water.
- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.11.3 Proposed Cleanup Actions

- Based on the results of the SI field investigation, the steam line system in Parcel B was apparently not involved in past waste oil transfers, and no releases to the environment have occurred. Therefore, no further field investigation of the steam line system in this area is recommended. The proposed remedial action is to remove all steam lines and any associated friable asbestos on the lines in Parcel B.

3.12 IR-46: FUEL DISTRIBUTION LINES AND TANK FARM

3.12.1 Site Description

Fuel Distribution Lines and Tank Farm

- Diesel and lubrication oil lines were used to transport fluids from the tank farm to Berths 55 through 60 along the north shoreline of HPS.
- Suspected fuel lines near Dry Docks 5, 6, and 7 were not verified with geophysics. Other fuel lines were confirmed. Natural gas lines are located between Dry Dock 7 and the ASTs at the northeast corner of Building 146 (IR-23).

3.12.2 Current Status

- The PA/SI field work for the site has been completed.
- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.12.3 Proposed Cleanup Actions

- Remove fluids from lines and soils containing fuel.

3.13 IR-50: STORM DRAINS AND SANITARY SEWERS

3.13.1 Site Description

- The sanitary sewer and storm drain systems at HPS were originally designed and constructed as a combined sanitary sewer and storm drain system.

- Separation of the combined system began in 1958 and was largely completed by 1976.

Storm Drains

- The storm drains discharge into the Bay at five locations.

- Tidal inflows, inoperative flood control gates, and low pipeline gradients contribute to sediment accumulation in the storm drain system. Sewage appears to enter the storm drain system near Building 112(d) (IR-06).

- The Navy conducted a nontime-critical removal action that involved removing the contaminated sediments in the storm drain system. A total of approximately 251 yd^3 of contaminated sediments were removed from 9,810 linear feet of Parcel B storm drains and were disposed of off site.

Sanitary Sewers

- The overall sanitary sewer system was expanded from 1942 through 1958 and is constructed of iron, concrete, brick, and vitrified clay pipe.

- Sewage collected from throughout the system flows to Pump Station A (Building 819), where it is then pumped through a force main to the west end of Crisp Avenue, where it leaves HPS and enters the San Francisco sanitary sewer system.

- Parcel B water-level elevation contour maps and sewer water analytical results indicate that the sanitary sewer system and backfill appear to act as a sink and are possibly collecting and transporting groundwater from VOC plumes at IR-06. No evidence, however, of chemical contaminants was found in the sewer system in Parcel B.

3.13.2 Current Status

- The PA/SI field work for the site has been completed.
- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.
- Sediment was removed from the system as an interim removal action in 1996.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft storm drain sediment removal report was submitted to the regulatory agencies in December 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.13.3 Proposed Cleanup Actions

- Line cracked storm drain lines that are below the groundwater table and pressure-grout the bedding material at these cracked pipe locations.

3.14 IR-51: TRANSFORMER LOCATIONS

3.14.1 Site Description

- IR-51 consists of buildings or areas throughout HPS that formerly contained one or more transformers containing PCBs.
- One hundred ninety-nine PCB-containing transformers were removed from HPS.

- Results of a literature search, interviews, and site visits revealed 12 transformer locations in Parcel B.

- Soil around seven of the 12 transformers was sampled for PCBs. PCBs were detected in soil samples collected from three of the seven locations.

3.14.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.14.3 Proposed Cleanup Actions

- Remediation of the former transformer locations were addressed as part of the individual IR sites.

3.15 IR-60: DRY DOCKS 5, 6, AND 7 (SA SITE 76)

3.15.1 Site Description

- IR-60 consists of Dry Docks 5, 6, and 7.

- Dry Docks 5, 6, and 7 are adjacent to each other at the northern end of HPS. They were used for submarine maintenance and repair, and consist of an open docking area surrounded by piers. The bottom of the dock area is believed to be concrete. Multiple utility lines lead to and run under the dry dock area. Rail lines for cranes extend along the piers. Some areas around the dry docks are paved with asphalt.

- The primary constituents of concern are creosote, metals, paints, oils, solvents, and fuels. Degraded asphalt and concrete were observed at the site.

3.15.2 Current Status

- The final SA report was completed April 15, 1994.
- The SI/RI field work started in mid-July 1995.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.15.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal.

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

3.16 IR-61: BUILDING 122 (SUBSTATION V, SA SITE 79)

3.16.1 Site Description

- Building 122 is an electric power generating substation.
- Substation V is in Building 122, which is a two-story building with two one-story add-ons and a basement. The two-story portion has four platforms that previously held two generators, with drain pipes and sumps adjacent to the platforms. There is a series of batteries along the southeast wall. The larger one-story add-on contains switches, and the smaller add-on encloses a sump that leads outside. There is an uncurbed pad with three transformers outside the building on its eastern side. The middle transformer has oil stains.

3.16.2 Current Status

- The final SA report was completed on April 15, 1994.
- The SI/RI field work started in mid-July 1995.
- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.
- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.
- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.
- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.
- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.16.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal.

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

3.17 IR-62: BUILDING 115 AND 116 (TRAINING BUILDINGS - SA SITE 82) AND TANK S-135

3.17.1 Site Description

Buildings 115 and 116 (Training Buildings)

- Buildings 115 and 116 served as training buildings. Currently, Building 115 is used by New World Design, and Building 116 is used for storage by Frameworks.
- A 500-gallon AST is near Building 115. The contents of the AST are unknown and need to be evaluated.

Tank S-135

- Tank S-135 was a 1,250-gallon fuel oil UST located on the north side of Building 116. Information concerning the dates of installation and abandonment of the UST is unavailable.

- During the removal of the UST, associated piping was traced and removed. Field observations during removal work indicated corrosion holes on the UST and discoloration and hydrocarbon odor in soil samples.

- Soil samples collected during removal work at 2 feet bgs identified high levels of SVOCs, diesel, gasoline, and metal contaminants above the HPALs. Groundwater was not encountered.

3.17.2 Current Status

- The UST was removed and media sampling was performed as part of Phase II UST work.

- The UST-related RI field work has been completed. The fieldwork at Buildings 115 and 116 started in mid-July 1995.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

- The draft final Parcel B FS report was submitted to the regulatory agencies September 3, 1996.

- The draft final Parcel B PP was submitted to the regulatory agencies October 16, 1996.

- The final Parcel B ROD was submitted to the regulatory agencies October 7, 1997.

- The draft final Parcel B remedial design documents were submitted to the regulatory agencies March 23, 1998.

3.17.3 Proposed Cleanup Actions

Soil

- Soil excavation and off-site treatment and disposal.

Groundwater

- Groundwater monitoring
- Removal of the steam pipelines

4.0 PARCEL C INSTALLATION RESTORATION SITES

Parcel C will be the fourth parcel transferred to the City of San Francisco (after Parcel D). It consists of approximately 73 acres of northeast central shoreline and lowland coast. Parcel C is comprised of sites IR-25, IR-27 through IR-30, IR-49, IR-57, IR-58, IR-63, and IR-64, as well as portions of sites SI-45, SI-50, and SI-51. Appendix F contains the enforceable schedules for the delivery of the parcel-wide RI/FS and decision documents (HLA 1994b; IT 1997a, 1997b; PRC 1997a, 1997b).

4.1 IR-25: BUILDING 134 (MACHINE SHOP)

4.1.1 Site Description

- Building 134 (Machine Shop) is currently used by Odaco, Inc., and was historically used by Cal Marine Work Machine Shop. A large concrete dip tank/degreasing vat, labeled "chlorinated materials" and containing sludge, is built into the foundation of this building. This tank drains to a sump that is partially inside and partially outside the building.

- Pools of standing oil were observed on the concrete floor near and under machines during the PA. The floor tiles in one machine room were saturated and deformed apparently by oil and corrosive material.

- The primary concerns at this site include sumps, drums, dip tank, and machine rooms.

4.1.2 Current Status

- The PA/SI field work for the site has been completed.

- The SI results and RI recommendations for the site were submitted to the regulatory agencies July 27, 1993.

- The draft final Parcel B SI report was submitted to the regulatory agencies in April 1994.

- The draft final Parcel B RI report was submitted to the regulatory agencies June 3, 1996.

4.1.3 Proposed Cleanup Actions

- IR-25 was moved from Parcel B to Parcel C because of dense nonaqueous-phase liquids (DNAPL) under Building 134. A treatability study is being performed to see if any innovative technologies will remediate the DNAPLs at IR-25. The results of the treatability study will appear in the draft final Parcel C FS report due May 8, 1998.

- Remedial actions for soil and groundwater at IR-25 are expected to be proposed.

4.2 IR-27: BUILDING 205 (PUMP AND COMPRESSOR PLANT) AND TANKS HPA-06 AND S-214

4.2.1 Site Description

Building 205 (Pump and Compressor Plant PD2)

- Building 205 is currently not in use; however, it was formerly used for boiler steam generation, and as the pumphouse for Dry Dock 3.

- During the PA, evidence of previous asbestos remediation activities was present. Disturbed materials including asbestos dust were observed on the floor and in other areas. The presence of petrochemicals is suspected in a deep subsurface pump room that is flooded, apparently with Bay water. Lead contamination is suspected in the chipped and flaking paint. The area around the building is paved, and no significant staining was observed.

- The primary constituents of concern are asbestos, lubricating oil, lead, and dielectric fluid.

Tank HPA-06

- Tank HPA-06 was an approximately 24,000-gallon water UST located on the north side of Building 205 and adjacent to Building 204. Information concerning the dates of installation and abandonment of the UST is unavailable.

- Field observations during closure work did not indicate any contamination.

- Soil samples collected at 11 to 15.5 feet bgs during closure work identified metal contaminants above the HPALs. Groundwater was encountered at 9.5 to 19.5 feet bgs, but no samples were taken.

Tank S-214

- Tank S-214 was a cylindrical 21,924-gallon fuel oil tank buried upright and located between Buildings 204 and 205. The UST was used to store fuel oil for the boiler units located in Building 205. The UST was installed in 1940. It is unknown how long the UST had been inactive prior to its closure in place.

- Field observations during closure work did not identify any contamination.

- Soil samples collected at 3.5 to 4.5 feet bgs during closure work identified moderate levels of SVOCs and diesel, low levels of gasoline, and metal contaminants above the HPALs in the soil. Groundwater was encountered at 3.5 to 4.5 feet bgs.

4.2.2 Current Status

- The PA/SI field work for the site has been completed.
- The USTs were abandoned in place and media sampling was performed during the Phase II UST work.
- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.
- The draft final Parcel C RI report was on submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.2.3 Proposed Cleanup Actions

- An area in soil at IR-27 was identified with only TPH. This area is recommended for further evaluation under the petroleum corrective action plan (CAP).
- Pump chamber water should be removed and disposed of in a water treatment facility.

4.3 IR-28: BUILDINGS 211, 219, AND 229 (SA SITE 111); BUILDING 214 (COMBAT WEAPONS SYSTEM OFFICE); BUILDING 230 (SA SITE 99); BUILDINGS 231 AND 251 (SA SITE 94); BUILDINGS 253, 258, AND 270 (SA SITE 102); BUILDING 271 (SA SITE 103); BUILDING 273 (SA SITE 101); BUILDING 281 (SA SITE 100); BERTH 2; TANKS HPA-01 THROUGH HPA-05, HPA-07, HPA-10, HPA-11, HPA-12, HPA-16, HPA-17, HPA-33, HPA-34, S-001 THROUGH S-004, S-215, S-219, AND S-251

4.3.1 Site Description

Buildings 211 (Electric Shop) and 253 (Electronic, Optical, and Ordnance Shop) - SA Sites 111 and 102

- Buildings 211 and 253 (Electronics, Optical, and Ordnance Shops) are interconnected. These buildings are currently not in use; however, they were formerly used for machining, welding, assembly, and painting operations. Building 253 had six main production floors and a tower. Repair, testing, fabrication, and calibration of a variety of electronic-, optical-, and ordnance-related equipment occurred in Building 253. The two buildings share a common main production floor, one large and two small paint booths, two large dip tanks, one large vapor degreaser, resin impregnation tanks, and a parts washer. There are several other process tanks on the third, fourth, and fifth floors of Building 253. The buildings share a common drain system that runs to a large sump on the west end of Building 253. A sump built into a

curing or drying oven is present in the north-central portion of Building 211. Sumps on the first floor in Building 253 and in the associated bomb shelter, Building 224, act as collection points for a variety of process waste streams. Building 253 was used as a radiation-related calibration room. It was surveyed prior to decommissioning. RASO has determined that surveys are not required.

Building 214 (Combat Weapons System Office)

- Building 214 was used by the Navy as the Combat Weapons System Office. Room 105 in Building 214 was used as a Health Physics Counting Room by the NRDL. The building was surveyed and cleared upon the decommissioning of the shipyard. Building 214 was used by Triple A as administration headquarters.

Building 219 (Electrical Substation E) - SA Site 111

- Building 219 is an electrical substation. This building houses three PCB-containing transformers, a sump, and three 55-gallon drums of PCB-containing oil.

- The primary concern is PCB transformers.

- EE-08 (formerly EE-99) is located northeast of Building 219 (Substation E). One hundred fifty-one yd^3 of contaminated soil was removed from beneath stained pavement. The COCs were arsenic, manganese, PCBs, and fuel hydrocarbons. The contaminated soil was disposed of in a Class II landfill.

Building 229 (Substation L) - SA Site 111

- Substation L is in Building 229, which is a concrete one-story building with a flat roof. The surrounding area is paved with asphalt. A 15-foot by 35-foot concrete pad with active transformers is east of the building. The transformers appear to be new and are labeled "No PCBs."

- The primary concerns are possible PCBs, unlabeled drums and cans near Building 229C (shed), and paints.

- A geophysical survey to determine the extent of the pipe beneath a leaking electrical control box, the extent of leakage, and the extent of contamination around the piping was performed in February 1996.

Building 230 (Shop Service) - SA Site 99

- Building 230 is currently leased to Ermico Enterprises (Ermico), a manufacturer of polyurethane skateboard wheels and bearings, and customized go-carts. The building has three sections. The easternmost room is used for manufacturing polyurethane components and skateboard wheels and contains the polyurethane heating, molding, and milling equipment. The middle room is an inactive machine shop, and the western bay is used for building go-carts and for maintenance.

- The potential COCs are VOCs, SVOCs, and petroleum hydrocarbons.

- The primary concerns are soil staining near the storm drain, and cracked and stained asphalt.

Building 231 (Machine Shop) - SA Site 94

- Building 231 is currently not in use; however, it was formerly used for machining. Inside this multi-story, heavy industrial machining building are several air treatment systems, sumps containing lubricant oils under large machinery, a wooden floor soaked with oil, sandblasting rooms, and other sumps and trenches.

- The primary concerns are lubricant oils, oil releases, multiple subfloor trenching and piping runs, and a large exterior sump.

Building 251 (Industrial Relations and Central Tool Room) - SA Site 94

- Building 251 was used to store tools and served as an industrial relations office. Building 251 is a wood-frame building with concrete slab-on-grade, covered with small wooden blocks as pavers. Large sliding doors designate a "Mercury Exclusion Area." A natural gas service line and a water line enter on the south side. The east side has a two-story office area with a fire sprinkler on the south side.

- The primary concerns are paints, solvents, acids, and metals. Creosote coated wood-block flooring is present throughout. Piping is suspected of being wrapped in asbestos-containing materials (ACM).

Building 258 (Pipefitters Shop) - SA Site 102

- Building 258 is currently not in use; however, it was formerly used for pipe manufacturing. At the east of the building is a large degreasing and pickling operation with large dip tanks and drainage sumps.

- The primary concerns are dip tank operations and oil stains on the north exterior.

- Transformers may still be on site.

Building 270 (Paint Shop) - SA Site 102

- One of the paint shops is in Building 270. It is a two-story wood building with a concrete floor and is open in some areas. The flooring consists of patchy wood-block. Building 270 is currently used for furniture and refrigerator storage by YYK. This building contains a storage area for 5- and 55-gallon drums of solvents and oils and a sandblast booth and baghouse. Two storm drains are present on the exterior of the building.

- The primary concerns are asbestos, lead paint, photo chemicals, oil stains on asphalt near storm drains, sandblast material, and oil and solvent storage in drums.

- EE-09 (formerly EE-193) is located east of Building 270. Three hundred twenty-five yd^3 of contaminated soil was excavated from an area beneath stained soil and asphalt. The COCs were arsenic, mercury, SVOCs, PCBs, and petroleum hydrocarbons. The contaminated soil was disposed of in a Class II landfill.

Building 271 (Paint Shop Annex) - SA Site 103

- Building 271 was a paint shop. It is a small (30 feet by 80 feet) one-story, sheet metal building constructed on a concrete slab. It is currently occupied by YYK as office space and is also used to store hoses and pumps.

- The primary concerns are metals, solvents, sandblast waste, and a potentially impacted storm drain.

- A large stain was observed on asphalt pavement in front of Building 271.

- A geophysical survey performed in February 1996 investigated a metal vault west of the building and located the subgrade piping.

Building 273 (Substation GH-2) - SA Site 101

- Substation GH-2 is in Building 273 on the south side of Building 281. It consists of a rectangular concrete wall and floor structure with no roof and contains transformers and switches.

- The primary COCs are PCBs in oils and solvents.

Building 281 (Weapons Precision Facility/Machine Shop) - SA Site 100

- The former weapons precision facility/machine shop was located in Building 281. It is a five-story steel-framed building with enclosed interior space on the south side of the building. The remainder of the building is open. Building 281 is currently unoccupied, but is leased by SFRA. Wooden storage crates, likely containing weapons, are stored on the floor. There is an elevator at the northeast exterior corner. A large vat under the elevator contains liquid.

- The primary concerns in the building are solvents, acids, asbestos, paints, and metals.

- The primary areas of concern (AOC) outside the building are the exterior sump and surrounding soils.

Berth 2

- Twenty-nine drums of radioactive waste inadvertently fell off the berth, but were immediately recovered in 1954. Contents of the drums were unknown, but were assumed to be radioactive sandblast waste mixed with concrete. Apparently, none of the drums ruptured or spread contaminants. The area was surveyed for radiation by EPA in 1989.

- Berth 2 has been screened for radioactive contamination, and no further investigation is required.

Tank HPA-01

- Tank HPA-01 was a 122-gallon methanol UST located on the south side of Building 211. Information concerning the dates of installation and abandonment of this UST is unavailable. UST HPA-01 was removed during Phase II UST work.

- During removal of the UST, associated piping was also removed. Field observations during removal work did not indicate any contamination.

- Soil samples collected at 5 feet bgs during removal work identified metal contaminants above the HPALs in the soil. Groundwater was not encountered.

Tanks HPA-02 and HPA-03

- USTs HPA-02 and HPA-03 were 1,500-gallon solvent and waste solvent tanks, respectively. The USTs were located end-to-end, adjacent to the north side of Building 253. Information concerning the dates of installation and abandonment of the USTs is unavailable. The USTs were removed during Phase II UST work.

- The USTs were removed by two separate excavations. During the removal of the USTs, the associated vaults and piping between the USTs were also removed. Field observations during removal work did not indicate any contamination.

- Soil and groundwater samples were collected from the site of the two USTs during removal work. Soil samples were collected at 7 feet bgs. Groundwater was encountered at 7 feet bgs. Soil samples collected identified VOCs, SVOCs, diesel, and metal contaminants above the HPALs. Groundwater samples collected identified SVOCs, VOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the Hunters Point groundwater ambient levels (HGAL).

Tanks HPA-04 and HPA-05

- Tanks HPA-04 and HPA-05 were 1,000-gallon gasoline and diesel USTs, located near the west end of Building 253. Information concerning the dates of installation and abandonment of these USTs is unavailable.

- Both USTs were removed by a single excavation. During the removal of the USTs, piping associated with the USTs was also removed. Field observations during removal work indicated an oil sheen on groundwater.

- Soil and groundwater samples collected at 9 feet bgs from the site of the two USTs during tank removal identified metal contaminants above the HGALs.

Tank HPA-07

- Tank HPA-07 was a 500-gallon waste oil UST located in an alleyway between Building 272 and Building 281. Information concerning the dates of installation and abandonment of the UST is unavailable. During the removal of the UST, associated piping was also removed. Field observations during removal work indicated corrosion holes in the tank and an oily sheen on groundwater.

- Soil samples collected at 8 feet bgs during removal work identified a high level of SVOCs, and metal contaminants above the HPALs. A sample of groundwater, encountered at 8 feet bgs, identified low levels of VOCs, SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HGALs.

Tank HPA-10

- Tank HPA-10 was a 6,500-gallon fuel oil UST located at the east end of Building 231. Information concerning the dates of installation and abandonment of the UST was unavailable. The UST was removed during Phase II UST work.

- Field observations during removal work indicated an oily sheen on groundwater. During removal of the UST, the associated vault and piping were also removed.

- Soil samples and one groundwater sample were collected during removal work. Groundwater was encountered at 7 feet bgs. Soil samples identified VOCs, SVOCs, diesel, gasoline, and metal contaminants above the HPALs. Groundwater samples collected identified SVOCs, diesel, gasoline, and metal contaminants above the HGALs.

Tank HPA-11

- Tank HPA-11 was a 1,600-gallon diesel UST located on the north side of Building 231. Information concerning the dates of installation and abandonment of this UST is unavailable. The UST was removed during Phase II UST work.

- During the removal of the UST, the associated piping was also removed. Field observations during removal work did not identify any contamination.

- Soil samples collected at 7 feet bgs during removal work identified low levels of SVOCs, VOCs, diesel, and metal contaminants above the HPALs. Groundwater was not encountered.

Tank HPA-12

- Tank HPA-12 was a 750-gallon diesel UST located on the north side of Building 231, approximately 30 feet west of tank HPA-11. Information concerning the dates of installation and abandonment of the UST is unavailable. The UST was removed during Phase II UST work.

- During the removal of the UST, the associated piping was also removed. Field observations during closure work did not identify any contamination.

- Soil samples collected at 10 to 10.5 feet bgs during closure work identified low levels of VOCs, SVOCs, pesticides and PCBs, diesel, and metal contaminants above the HPALs. Groundwater was not encountered at this site.

Tank HPA-16

- Tank HPA-16 was a 7,200-gallon neutralization UST located at the northeast corner of Building 231. Tank HPA-16 shared a common wall with Building 231. Information concerning the dates of installation and abandonment of the UST is unavailable. This UST was removed during Phase II work.

- Field observations during closure work did not identify any contamination.

- Soil samples collected at 9 to 11.5 feet bgs during closure work identified low levels of VOCs, SVOCs, and metal contaminants above the HPALs. Groundwater was not encountered at this site.

Tank HPA-17

- Tank HPA-17 was a 1,700-gallon diesel UST, located adjacent to the north side of Building 231. Information concerning the dates of installation and abandonment of the UST is unavailable. The UST was removed during Phase II UST work.

- Field observations during removal work did not identify any contamination.

- Soil samples collected during removal work identified high levels of SVOCs, diesel, gasoline, and metal contaminants above the HPALs. Groundwater was not encountered at the site.

Tanks HPA-33 and HPA-34

- USTs HPA-33 and HPA-34 are assumed to be solvent USTs, with capacities of approximately 750 gallons each. The USTs were adjacent to each other, end-to-end, and were located on the south side of Building 281. Information concerning the dates of installation and abandonment of these USTs is unavailable. The USTs were removed during Phase II UST work.

- Each UST was removed by a separate excavation. During the removal of the USTs, the associated piping was traced and removed. Field observations during removal work indicated corrosion holes on HPA-33.

- Soil samples collected at 6 to 9 feet bgs during removal of the two USTs identified low levels of VOCs, SVOCs, diesel, and metal contaminants above the HPALs. A groundwater sample collected at 9 feet bgs identified VOCs, SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HGALs.

Tanks S-001, S-002, S-003, and S-004

- USTs S-001, S-002, S-003, and S-004 were located at the northwest corner of Building 253. USTs S-001, S-002, and S-004 were 3,000-gallon gasoline tanks; UST S-003 was a 3,000-gallon diesel fuel tank. The USTs were used to supply gasoline and diesel to four fuel pumps located at a service station island approximately 20 feet west of the USTs. The USTs were removed during Phase II UST work.

- The USTs were installed in 1976. Benzene, toluene, and xylenes were found in soil-gas samples collected near the USTs prior to the commencement of the UST removal activities. In addition, chlorinated solvents were detected in soils in the vicinity of the USTs. The source of this contamination was not identified.

- Soil samples collected at 2 to 7 feet bgs during removal work at the site of the four USTs identified levels of VOCs, SVOCs, diesel, gasoline, and metal contaminants above the HPALs. Samples of groundwater, encountered at 8.8 feet bgs, identified high levels of VOCs, diesel, gasoline, SVOCs, and metal contaminants above the HGALs.

Tank S-215

- UST S-215 was located between Buildings 270 and 271, approximately 80 feet south of Nimitz Avenue. UST S-215 was a 25,320-gallon tank used to store paint thinner for the paint shop in Building 270. The UST was removed during Phase I work.

- Field observations during closure work did not indicate any contamination.

- Soil samples collected at 8 feet bgs during closure work identified high levels of SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HPALs. Groundwater was not encountered.

Tank S-219

- Tank S-219 was a 1,000-gallon waste solvent UST located adjacent to the north side of Building 251. Information concerning the dates of installation and abandonment of the UST is unavailable. The UST was removed during Phase II work.

- Field observations during removal work did not identify any contamination.

- Soil samples collected during removal work identified metal contaminants above the HPALs. Groundwater was not encountered.

Tank S-251

- UST S-251 was a 1,000-gallon solvent tank located adjacent to the north side of Building 251. The UST was removed during Phase I UST work.

- Field observations during removal work did not identify any contamination.

- Soil samples collected at 8 feet bgs during removal work identified no contaminants. Groundwater was not encountered.

4.3.2 Current Status

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.
- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.
- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.3.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater at IR-28 were proposed in the draft Parcel C FS report.

4.4 IR-29: BUILDINGS 203 (POWER PLANT SUBSTATION H), BUILDING 217 (SHEETMETAL SHOP), BUILDING 275 (SHEETMETAL ANNEX), BUILDING 279(d) (MATERIAL STORAGE RACK), BUILDING 280 (COVERED WORK AREA), BUILDING 282 (ABRASIVE BLAST FACILITY), AND TANKS S-203, S-209 THROUGH S-213

4.4.1 Site Description

Building 203 (Power Plant Substation H)

- Building 203 is currently in use. Astoria Metals has access to the building for electrical reasons. However, it was formerly used as a boiler room. There are a number of ASTs associated with this building. None of the ASTs are in use. Only two of the tanks require further investigation: a 1,600-gallon tank containing a petroleum product and a 1,200-gallon tank containing an unknown liquid.
- An additional AOC at this site consists of UST sites 4, 5, and 6.

Building 217 (Sheetmetal Shop)

- Building 217 is currently unoccupied. It was formerly used for photoengraving, welding, and painting, and as a sheet metal shop.

- Dipping tanks used for photoengraving are suspected of containing metal residues. A paint booth equipped with a water curtain may contain paint residue. Soil was observed in the utility floor trench on the west side of the building. Floor staining was observed in the welding area. Particulates were present in a baghouse on the east exterior side of the building. A storm drain beneath the exterior stairway on the east side of the building received particulates and process runoff. The storm drain was cleaned April 4, 1997. There is a floor sump near the center of the building; its contents are unknown.

- The primary concerns are photoengraving dip tank residue, soil discoloration, paint residue, and particulates.

Building 275 (Sheetmetal Annex)

- Building 275 is currently leased to Ermico as an aluminum casting shop. Historically, it was used for sheet metal fabrication.

- Aluminum oxide fines are dispersed on the floor and other horizontal surfaces throughout the building and are dropping onto the exterior pavement through seams in the walls; although only aluminum is suspected, additional metals may be present as well as casting sand containing cyanide. Apparently, empty drums and equipment are stored on the pavement in the southwest corner over a storm drain. Leakage to the storm drain was observed. Various spills were observed on the surrounding pavement. A tank pad at the northeast corner and a leaking air compressor on the south side in an open storage shed were observed.

- The primary concerns are aluminum oxide alloy powder on the floor, and drum storage at the building's exterior.

Building 279(d) (Material Storage Rack)

- Building 279(d) has been demolished. Historically, it was used for storage of equipment and unknown products. The concrete floor has indentations where machinery existed. A trench floor drain in the center of the building likely connects to a storm drain west of the building. Parts, dip-cleaning baskets, dip tanks, and garbage pails containing oil are stored west of the building.

- The primary concerns are discolored soils west of the building, and floor and storm drains.

- EE-10 (formerly EE-43) is located west of demolished Building 279. Fourteen yd^3 of contaminated soil was excavated from beneath an area where equipment parts, dip-cleaning baskets, dip tanks, and empty drums were stored. The COCs were thallium and petroleum hydrocarbons. The contaminated soil was disposed of in a Class II landfill.

Building 280 (Covered Work Area)

- Building 280 is currently not in use. It was formerly used for aluminum cleaning and oil recycling. Signs on the wall indicate that a series of dip and cleaning tanks once existed in this building.

- Prior investigations noted salt residue buildup in the northwest corner; a dark oily stain along the west wall, which suggests leakage out of the building onto the pavement and into a storm drain west of the building; a trench traversing the center of the building (east-west); a reddish brown stain on the pavement east of the building drums with oil and metal shavings north of the buildings; and an oily tar-like buildup along the north exterior edge of the building.

- The primary concerns are floor and pavement stains, the collection trench through center of building, and drums on the north side.

Building 282 (Abrasive Blast Facility)

- Building 282 is currently not in use. It was formerly used for sandblasting operations. A sealed chamber in the building serves as a blasting room. Air in the chamber is evacuated through a raised waffled floor to a large baghouse filtration system adjacent to the chamber.

- The primary concern is sandblast material. A proposed lease to Astoria Metals Corporation (Astoria Metals) is still in process. The proposed use is for sandblasting operations.

Tank S-203

- UST S-203 was a 500-gallon steel gasoline tank located immediately south of Building 203.

- Field observations during removal work indicated that soils have been contaminated with gasoline.

- Soil samples collected during removal work did not identify any organic constituents at 5 to 6 feet bgs. A sample of groundwater, encountered at 6 feet bgs, identified low levels of VOCs and metal contaminants above the HGALs. A soil sample identified lead above its HPAL.

Tanks S-209 and S-210

- UST S-209 was located south of Building 203 near the intersection of Nimitz Avenue and Blandy Street. It was a circular 210,000-gallon reinforced concrete tank that supplied fuel oil to the boiler plant (Building 203), using an adjacent pumphouse.

- UST S-210 was a rectangular 14,000-gallon brine tank located approximately 4 feet northwest of UST S-209 and south of Building 203.

- Field observations during closure work did not indicated any contamination. Groundwater was not encountered.

- Soil samples collected at 3 to 4 feet bgs from the two USTs during closure work identified low levels of SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HPALs.

Tanks S-211, S-212, and S-213

- UST S-211 was a 3,000-gallon fuel oil UST located east of Building 203. Information concerning the dates of installation and abandonment of UST S-211 is unavailable. During the removal of UST S-211, the vault above the UST and associated piping were removed.

- UST S-212 was a 4,500-gallon fuel oil UST located adjacent to the east side of Building 203. Information concerning the dates of installation and abandonment of UST S-212 is unavailable. During the removal of UST S-212, the vault above the UST and the associated piping were removed.

- UST S-213 was a 35,000-gallon water and condensate return storage UST located adjacent to the east side of Building 203. UST S-213 was installed in 1943; information is unavailable on when the UST was abandoned. UST S-213 was 27 feet 4 inches in diameter, 10 feet deep, and was constructed of concrete lined with brick. As part of the closure procedures, a pump pit, pumps, and piping associated with UST S-213 were removed. Field observations during removal work indicated floating product on groundwater.

- Soil samples collected at the site of the three USTs at 6 to 13 feet bgs identified potential contaminants in soil: VOCs, SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HPALs. Samples of groundwater, encountered at 6 to 13 feet bgs, also identified VOCs, high levels of SVOCs, pesticides and PCBs, diesel, gasoline, and metal contaminants above the HGALs.

4.4.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.

- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.4.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-29 were proposed in the draft Parcel C FS report.

4.5 IR-30: BUILDING 241 (FORGE SHOP)

4.5.1 Site Description

- Building 241 (Forge Shop S-23) is currently unoccupied. It was formerly used as a foundry.
- Stains and discolored soils are present throughout the building interior. On the building's exterior southeast corner, oil was observed oozing from under the walls. Several furnaces inside the building contain asbestos fire brick. A metal-framed structure on the east exterior side of the building appears to have been used as a covered storage area. Metal in this structure appears corroded, and wood flooring appears damaged by chemicals.
- The primary concerns are asbestos firebrick in the foundry area, soil staining, and the utility trench.

4.5.2 Current Status

- The PA/SI field work for the site has been completed.
- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.
- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.5.3 Proposed Cleanup Actions

Remedial actions at IR-30 were not proposed in the draft Parcel C FS report.

4.6 IR-45: STEAM LINES

4.6.1 Site Description

- The steam line system at HPS spans the entire shipyard and provides steam to heat buildings and ships docked at the facility, and to warm oil lines to facilitate oil flow through those lines.

- The steam line system was constructed approximately 40 years ago and is no longer in use. Pipelines composing the system are often covered with lagging that contains asbestos and are typically contained within concrete trenches covered by pre-cast concrete slabs.

- Maintenance access points, referred to as "utilidors," are located approximately every 200 to 400 feet along the system.

- Generally, the utilidors consist of 4-inch-wide steel slats placed side by side over the trench opening.

- Portions of the steam line system in Parcel C allegedly were used by Triple A to transport waste oils, potentially containing PCBs, from Dry Dock 4, Building 521, and from Berth 29 to Tank S-505.

- No oil contamination was observed within the utilidors or steam lines, nor was there evidence of a release of water from the lines. The steam lines appear to be in relatively good condition. Friable asbestos was noted in several locations.

4.6.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.

- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.6.3 Proposed Cleanup Actions

- Remove all steam lines and any associated affected soil.

4.7 IR-49: FUEL DISTRIBUTION LINES

4.7.1 Site Description

- The fuel distribution lines run between Building 203 and the North Berthing Slip, and between Building 205 near Dry Dock 2 and Berths 1 and 2 along the northeast shoreline of HPS.
- The fuel lines at Building 203 connect to two USTs.
- The Building 205 UST fuel line system was determined to be enclosed mostly in a utilidor, and seems also to be connected to Building 231.
- Adjacent to Building 203 are UST sites 4, 5, and 6, and adjacent to Building 205 are UST sites 7 and 8, which were investigated under the UST program.

4.7.2 Current Status

- The PA/SI field work for this site has been completed.
- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.
- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.7.3 Proposed Cleanup Actions

- Remove fuel lines and associated stained soil.

4.8 IR-50: STORM DRAINS AND SANITARY SEWERS

4.8.1 Site Description

- The sanitary sewer and storm drain systems at HPS were originally designed and constructed as a combined sanitary sewer and storm drain system.
- Separation of the combined system began in 1958 and was largely completed by 1976.

Sanitary Sewers

- The overall sanitary sewer system was expanded from 1942 through 1958 and is constructed of iron, concrete, brick, and vitrified clay pipe.

- Sewage collected from throughout the system flows to Pump Station A, where it is then pumped through a force main to the west end of Crisp Avenue, where it leaves HPS and enters the San Francisco sanitary sewer system.

- The sewer system in Parcel C is largely below static water levels and therefore acts potentially as a groundwater "sink" or drain.

Storm Drains

- The storm drains discharge into the Bay at five locations.

- Although the storm drain system flows by gravity, low ground surface elevations and tidal fluctuations inhibit efficient drainage. Tidal inflows appear to affect most Parcel C storm drains because flood control gates are inoperative.

- The Navy conducted a nontime-critical removal action that involved removing the contaminated sediments in the storm drain system. A total of approximately 451 yd^3 of contaminated sediments were removed from 14,885 linear feet of Parcel C storm drains and were disposed of off site.

4.8.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.

- The draft Parcel C FS report was submitted to the regulatory agencies in February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

- The draft storm drain sediment removal report was submitted to the regulatory agencies in December 1997.

4.8.3 Proposed Cleanup Actions

- Rehabilitate sections of the lines below the groundwater table.

4.9 IR-51: TRANSFORMER LOCATIONS

4.9.1 Site Description

- IR-51 consists of buildings or areas throughout HPS that formerly contained one or more transformers containing PCBs.
- One hundred-ninety-nine PCB-containing transformers were removed at HPS, 48 of which were from the Building 524 yard.
- Parcel C had 17 sites where transformers were removed from service. Eight sites were sampled for PCB contamination, and all eight indicated the presence of PCBs.

4.9.2 Current Status

- The PA/SI field work for the site has been completed.
- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.
- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.9.3 Proposed Cleanup Actions

- Remediation of the former transformer locations will be addressed as part of the individual IR sites.

4.10 IR-57: DRY DOCK 4 AREA

4.10.1 Site Description

- This area is currently in use by Astoria Metals. Historically, the area was used for ship repair; however, Astoria Metals is using it for ship dismantling. The entire area is paved. There is evidence of dispersed sandblast material on the asphalt. Storm drains likely contain sandblast debris. An oil stain from a leaking transformer on the northeast side extends to a storm drain. Wrapping containing ACM was observed on steam pipes associated with water tanks on each side of the dry dock area. A large hopper containing black sandblast material exists at the north corner of the site.
- The primary concerns are the sandblast material and PCB contamination.

- Sediment that had accumulated in the drainage tunnels below the floor of the dry dock was removed and disposed of off site. Two hundred-sixty tons of sediment was removed from about half of the drainage tunnels. The main COCs were copper, lead, and zinc; evidence of sandblast waste. This remedial action is not complete.

- EE-06 (formerly EE-16) and EE-07 (formerly 17) are located at the northwest end of Dry Dock 4 in a former hazardous waste accumulation area. Approximately 19 yd^3 and 91 yd^3 of contaminated soil was excavated at EE-06 and EE-07, respectively. The main COCs were arsenic, fuel, and petroleum hydrocarbons. The contaminated soil was disposed of at a Class II landfill.

4.10.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.

- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies February 1997.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.

- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.10.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-57 were proposed in the draft Parcel C FS report.

4.11 IR-58: SCRAP YARD NEAR BUILDING 258

4.11.1 Site Description

- This area is north of Building 258 and is currently used for storage and disposal of miscellaneous items. Its historical use is unknown.

- Most of the site has an asphalt or concrete surface, with a few utility vaults and storm drains. Some of the accumulated materials have been segregated into scrap metals (aluminum and copper), manufacturing equipment, abandoned automobiles, motors, scrap wood, office equipment, and fire extinguishers. In one area, it appears that several drums of tar were emptied onto the soil. Several damaged insulators leaking oil were observed on the site. Other debris observed on the surface included plates from a damaged lead-acid battery, a leaking oil drum, and a large piece of equipment that is leaking oil.

- The primary concerns are the oil stains on the soil and the miscellaneous debris.

- EE-11 (formerly EE-scrap yard) is located north of Buildings 251 and 258. Seventeen yd^3 of contaminated soil was excavated. The main COCs were mercury, VOCs, and PCBs. The contaminated soil was disposed of at a Class II landfill.

4.11.2 Current Status

- The PA/SI field work for the site has been completed.

- The draft final Parcel C SI report was submitted to the regulatory agencies in May 1994.

- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies February 1997.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.

- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.11.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater were proposed in the draft Parcel C FS report.

4.12 IR-63: BUILDING 278(d) (SA SITE 89)

4.12.1 Site Description

- Building 278(d) was used as a storage building; now the area is a vacant lot surrounded by a chain-link fence. No evidence of Building 278 exists except for a light colored asphalt and concrete patch measuring about 60 feet by 60 feet. Several other asphalt and concrete patched areas exist in the vicinity.

4.12.2 Current Status

- PA/SI work for the site has been completed.

- The final SA report was completed April 15, 1994.

- The SI/RI field work started in mid-July 1995.

- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.12.3 Proposed Cleanup Actions

- Remedial actions at IR-63 were not proposed in the draft Parcel C FS report.

4.13 IR-64: BUILDING 206 (SUBSTATION A - SA SITE 90)

4.13.1 Site Description

- Building 206 is located immediately south of Dry Dock 3. Building 206 is also known as Substation A.
- Substation A is an abandoned electrical substation, and is a half story above grade, and one-and-one half story below grade. Its concrete structure measures 100 feet by 40 feet. There are seven sumps inside the building, six of which were probably drip basins for equipment. Currently, the building is flooded.
- The primary concerns are oils, possibly PCBs, heavy metals, and acids.

4.13.2 Current Status

- PA/SI work for the site has been completed.
- The final SA report was completed April 15, 1994.
- The draft final Parcel C RI report was submitted to the regulatory agencies March 13, 1997.
- The draft Parcel C FS report was submitted to the regulatory agencies February 27, 1997, and the draft final Parcel C FS report is due May 8, 1998.

4.13.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-64 were proposed in the draft Parcel C FS report.

5.0 PARCEL D INSTALLATION RESTORATION SITES

Parcel D will be the third parcel transferred to the City of San Francisco. It consists of approximately 103 acres of southeast central shoreline and lowland coast. Parcel D is comprised of sites IR-08, IR-09, IR-16, IR-17, IR-22, IR-32, IR-33, IR-34, IR-35, IR-37, IR-38, IR-39, IR-44, IR-45, IR-48, IR-50, IR-51, IR-53, IR-55, IR-65, IR-66, IR-67, IR-68, IR-69, IR-70, and IR-71. Appendix F contains the enforceable schedules for the delivery of the parcel-wide RI/FS and decision documents (HLA 1994c; IT 1997a, 1997b; PRC 1996d, 1997c; Tetra Tech EM Inc. (TtEMI) 1997a).

5.1 IR-08: PCB SPILL AREA, BUILDING 503(d), BASE LAUNDRY (NOW BUILDING 606, SAN FRANCISCO POLICE) AND BUILDING 508(d), LOCKER CLUB

5.1.1 Site Description

- Site IR-08 is in the southeastern portion of Parcel D, near Hussey and "H" Streets. The site covers approximately 0.5 acre and consists of the areas occupied by former Building 508 and a portion of former Building 503.

- Building 503 was the base laundry facility and Building 508 was a recreational facility (locker club). These facilities were operated from (at least) 1948 to 1974. Buildings 503 and 508 were demolished sometime between 1977 and 1979. The site of former Building 503 is currently occupied by Building 606, which was built in 1989 as the HPS military postal facility. Building 606 is currently occupied by the San Francisco Police.

- Two oily grease traps, related to the former Building 503 laundry facility, reportedly were located south and west of former Building 503. A 21,000-gallon AST, used for fuel oil, was also associated with the former laundry facility. This tank was removed prior to demolition of Building 503. In addition, the grease traps and floor drains were most likely removed as part of the construction activities for Building 606. An abandoned pumphouse, used to pump salt water to charge the fire-hydrant system, is immediately northeast of the PCB spill area. The date when this pumphouse was abandoned is unknown.

- A steam line was initially thought to be located near former Building 503 and was reportedly used by Triple A to transport waste oils with PCBs. A section of this line was broken in the early 1980s, during construction activities near Building 503. The break resulted in a spill of an unknown quantity of oil that was subsequently cleaned up. The steam line was also repaired. The steam line was removed in 1989 prior to the construction of Building 606.

- An unknown number of electrical transformers that contained PCB oil were reportedly stored on a transformer pad within the PCB spill area at IR-08. This pad was located on the south side of the former Building 503. Two transformers containing PCB oil were also located on power poles, north and south of the site. The transformers were removed from service by American Environmental Management Corporation (AEMC) and the Navy Public Works Department (NPWD) in 1988.

- Site features at IR-08 include a storm drain line that traverses the PCB spill area. Three catch basins are connected to this line, east of Building 606.

5.1.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.1.3 Proposed Cleanup Actions

- Remedial action for soil at IR-08 was proposed in the draft Parcel D ROD.

5.2 IR-09: PICKLING AND PLATE YARD

5.2.1 Site Description

- Site IR-09, which covers approximately 2.75 acres, is in the north-central portion of Parcel D at the north end of Hussey Street, between Buildings 411 and 402. Structures formerly located at the yard consist of three below-grade, brick-lined pickling tanks, plate drying racks, plate storage racks, and an overhead crane system. The open concrete secondary containment vault that housed the pickling tanks remains at IR-09. Most of the ground surface is covered by concrete or asphalt pavement, which is in poor condition. Underground utilities at the site include a shallow storm drain system for drainage within the yard, and storm drain and sanitary sewer systems beneath Hussey Street. A utility trench containing steam lines is in the northern portion of the yard.

- Between 1947 and 1973, the Pickling and Plate Yard was used by the Navy for industrial metal finishing and painting. Chemicals used at IR-09 included zinc chromate (paint primer), sodium dichromate, and sulfuric and phosphoric acids. Steel plates were dipped in acid tanks (pickled), dried on racks, and painted with zinc-chromate-based, corrosion-resistant primer. The painting operations left a residue of zinc chromate primer on the drying racks, the lower part of the overhead crane structure, and the ground surface. During plating operations at the site, approximately 15,000 gallons of spent acid rinse water was reportedly discharged, per month, to the (then) combined storm drain and sanitary sewer system. Currently, several tenants occupy the buildings bordering IR-09.

- Between November 1994 and January 1996, removal actions were performed at IR-09 under the 1991 removal action plan. These removal actions included: (1) removing plate storage and drying racks; (2) dismantling and removing three steel pickling tanks, including the brick lining; (3) removing zinc chromate primer residue from racks and structures; (4) removing the overhead crane structure; and (5) removing the vegetation with primer residue. The zinc chromate primer residue, the racks made of concrete, the bricks from the pickling tank lining, and the vegetation growing through the pavement were disposed of at a Resource Conservation and Recovery Act (RCRA) hazardous waste facility. The steel racks were cleaned of zinc chromate primer residue and were sold as scrap.

- Asphalt patching of the IR-09 ground surface was completed in March 1996. Prior to completion of the asphalt patching and the removal of the zinc chromate primer residue, runoff from IR-09 was collected in catch basins, stored in tanks, and sampled for metals before it was periodically discharged to the sanitary sewer system. The ASTs used for storage of runoff were demobilized from the site upon completion of the removal action tasks.

- As part of the removal action, three samples of zinc chromate primer residue were collected from the drying racks and analyzed. In addition, liquid samples were collected from each of the pickling tanks and from the containment vault. All of the samples were analyzed for pH, hexavalent chromium, SVOCs, and metals. The pickling tank and containment vault samples were also analyzed for TPH as extractable, unknown hydrocarbons.

5.2.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.2.3 Proposed Cleanup Actions

- Remedial actions for soil in the northwest and southwest corners of the site were proposed in the draft Parcel D ROD.

5.3 IR-16: CONTAINER STORAGE AREA (TRIPLE A SITE 9)

5.3.1 Site Description

- Site IR-16 is in the southern portion of Parcel D, between "H" and Mahan Streets, and is adjacent to IR-53. The site covers approximately 0.3 acre. The ground surface at the site consists entirely of asphalt or concrete pavement. No buildings are present at the site. IR-16 was used by Triple A between 1976 and 1986 for storage of drums, electrical transformers, flammable materials, and water tanks. The drums were stored on a concrete pad that is in the center of the site and covered approximately one-third of the site.

- During the initial investigation of IR-16 in 1987 by the San Francisco District Attorney's (SFDA) office, barrels containing oily rags, possibly soaked with oil and PCBs, and drums with labels indicating that they contained oil with PCBs, were noted. Documentation concerning the specific use of IR-16 by the Navy was unavailable. Currently, the site is vacant, and no drums are stored at the site.

5.3.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.3.3 Proposed Cleanup Actions

- Remedial actions for soil in the southeast portion of the site were proposed in the draft Parcel D ROD.

5.4 IR-17: DRUM STORAGE AND DISPOSAL SITE (TRIPLE A SITES 10 AND 11)

5.4.1 Site Description

- Site IR-17 is in the southern portion of Parcel D, south of the intersection of Hussey and Mahan streets. The site comprises approximately 1.8 acres of exposed soil, and no buildings are present at the site. A large reinforced concrete pad is near the southwest corner of the site and a fence surrounds the northern one-half of the site. Three short isolated drainage systems, each with a catch basin, drain the area at IR-17 and discharge storm water at outfalls near Berths 22 and 29.

- IR-17 was used by the Navy as early as 1949, primarily as a storage facility for military materials. Triple A used the site for drum storage and soil and industrial debris disposal between 1976 and 1986. Triple A waste management activities at the site included disposal of (some) drum contents at the site and pumping drum contents into tank trucks.

- During a 1986 inspection at IR-17, dark soil staining was observed near the drum storage area. It was also noted that one 5-gallon can of transmission oil was stored at the site, and one drum label indicated that the contents (of the drum) included PCBs. All of the drums stored by Triple A were removed from the site between 1986 and 1988 to an unknown location. During the same time, stained soil was also consolidated into piles and removed from the site. Currently, minor soil staining is visible and some industrial debris remains at the site.

5.4.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.4.3 Proposed Cleanup Actions

- Remedial actions were not proposed for IR-17 in the draft Parcel D ROD.

5.5 IR-22: SHOP SERVICE BUILDINGS 308, 368, AND 369

5.5.1 Site Description

- Site IR-22 is in the northwest portion of Parcel D, near the intersection of Manseau and "E" Streets. The site covers approximately 1.5 acres and consists of Buildings 368 and 369, Building 308, and the immediate areas surrounding the buildings. Building 308 was the former Saltwater Pumphouse and is currently used by Astoria Metals for storage. Building 368 was the former pipefitting shop and Building 369 was the former rigging shop. There is no information on the types of activities conducted at these buildings. Both buildings comprised the Navy Shop Service, which operated between 1940 and 1974. Underground utility corridors connect and service Buildings 368 and 369, and Building 274 at adjacent site IR-35.

- A 500-gallon gasoline UST, Tank HPA-308, is on the southeast side of Building 308. This tank was closed in place as part of the Phase II UST removals and closure in place (July 12, 1994). Field observations and analytical results from the closure in place activities do not indicate any impact on adjacent soil or groundwater from Tank HPA-308. As a result, no further investigations were recommended for Tank HPA-308.

- Following closure in 1974, Building 368 was leased to a civilian tenant, who used the building as a woodworking shop. The Navy continued to use Building 369 for storage of Base Public Works equipment. Both buildings are currently vacant.

- A scrap metal storage yard, operated by Astoria Metals, is just northeast of IR-22 (within site IR-35). Records indicate that spent sandblast abrasive was stored on exposed soil in this area; small piles of suspected sandblast abrasive were noted during a SI of IR-35 in 1996.

5.5.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.5.3 Proposed Cleanup Actions

- Remedial actions were not proposed for IR-22 in the draft Parcel D ROD.

5.6 IR-32: BUILDING 383 AND REGUNNING PIER

5.6.1 Site Description

- Site IR-32 is in the eastern portion of Parcel D, near the northeastern end of Mahan Street. The site covers approximately 9.4 acres and consists of the Regunning Pier, which extends along Berths 15 and 16, and includes Buildings 383 and 370. Building 370 was used as a latrine, but is currently not in use. Building 383 was used by the Navy for shipping and receiving and was later leased to Westinghouse for warehouse and office space. The building was later used as a field office for SI/RI field activities. Building 383 is currently used as office space. Electrical equipment, switch boxes, and crane parts are currently stored on exposed soil adjacent to the northeast end of Building 383.

- A 450-ton crane was constructed on the Regunning Pier to remove gun turrets from Navy ships during World War II. Impact testing of intercontinental ballistic missile launching systems was conducted on the Regunning Pier. Impact testing consisted of dropping launching components onto the Regunning Pier from the crane. The crane currently is inactive.

- Containers of radioactive material were stored at the Regunning Pier from 1950 to 1959. Information concerning the fate of the containers and the type of radioactive material stored at the site is unavailable. No radioactive contamination was found at IR-32 during these studies.

5.6.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.6.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-32 were proposed in the draft Parcel D ROD.

5.7 IR-33 NORTH: BUILDINGS 302, 302A, AND 304 AND FORMER USTs S-304 AND S-305

5.7.1 Site Description

- Building 302 was used by the Navy as a transportation shop for repair of automotive and locomotive equipment. Two hydraulic lifts are inside the eastern portion of this building; two aboveground, waste oil storage tanks, with an unknown total capacity were outside the northeast corner of the building; and two dip tanks, filled with a dark, oily liquid are currently outside the west side of the building. The bottoms of the dip tanks are below grade. Seven ASTs are associated with Building 302. The ASTs range from 95- to 1,600-gallon capacity (with 2 ASTs of unknown capacity). None of the ASTs are in use, but several require further characterization. Most of the ASTs still contain some type of liquid, probably water or petroleum product. Wastewater containing detergent, degreaser, and decarbonizer, generated from cleaning automotive equipment inside Building 302, was regularly discharged from drains inside the building, into the (formerly) combined storm drain and sanitary sewer system. During a 1988 survey, it was noted that an elevated tank (emitting a strong odor), a sump, and a spill area of unknown origin were present at Building 302. Building 302 is currently vacant.

- Building 302A was the former transportation shop annex. This building was used by the Navy for vehicle repair, sandblasting, and painting operations. Hydraulic lifts are present in Building 302A and between Buildings 302A and 304. An interconnected floor drain and sump are inside Building 302A. Building 302A was formerly occupied by Universal Painting and Sandblasting, a civilian tenant. However, the building is currently vacant. During investigations conducted in 1984 and 1988, waste oil, diesel fuel, antifreeze, paints, and chlorinated solvents were inventoried at Buildings 302 and 302A.

- Building 304 was formerly used by the Navy as a service station. Petroleum hydrocarbon compounds, including oils, fuels, and hydraulic fluid, were used at this building during operations. During a 1988 survey, mobile tanks with unknown contents were noted outside this building. The Base Realignment and Closure Cleanup Plan indicated that the mobile tanks were removed. However, a removal date was not listed. During an investigation conducted in 1990, petroleum hydrocarbon staining was noted on the ground surface near the sump located between Buildings 302A and 304. Building 304 is currently vacant.

- Two USTs (S-304 and S-305) were adjacent to Building 304. These tanks were removed in August 1991 during Phase I of the HPS UST program. The two 7,000-gallon tanks were used to store gasoline, and were connected to two sets of dispenser pumps located on a concrete pad near Building 304. Two vent pipes and two product pipes extended from the tanks to Building 304 and the dispenser island, respectively.

- EE-12 (formerly EE-59) is located at the northeast corner of Building 302. One hundred-sixty yd^3 of contaminated soil was excavated. The main COCs were chromium, lead, and mercury. The contaminated soil was disposed of at a Class II landfill.

5.7.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.7.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-33 North were proposed in the draft Parcel D ROD.

5.8 IR-33 SOUTH: BUILDINGS 364, 365, 411, 417, 418, AND 424

5.8.1 Site Description

- Building 364, in the southeast portion of the site, was formerly a NRDL building used for biological experiments. This building contained a radioactive effluent storage tank sump. Cesium-137 was identified inside this building. Two concrete-lined utility trenches outside this building lead to a concrete sump outside the building. In 1992, a radiological investigation conducted by PRC indicated that radioactive surface activity in one of the utility trenches exceeded U.S. Atomic Energy Commission (AEC) guidelines. Access to sumps and trenches was deemed too hazardous for additional investigation. Currently, Building 364 is used by Young Laboratories as a metallurgy and metal extraction and analysis shop.
- SA-125 consists of Building 365, which was formerly used by the Navy as an office for pipefitters. This building is in the southeast portion of the site. A radiological survey conducted at this building, did not indicate elevated radiation levels. Five small, grated floor drains are inside Building 365. Underground piping associated with these drains appear to drain toward the northwest corner of the building into a sewer vault located outside of Building 365. Currently, Building 365 is unoccupied.

- Building 411, which covers most of IR-33 South, was formerly a steel, shipfitting, boilermaking, and welding and burning shop. The building was used by the Navy for machining and welding operations. During operations in this building, wastewater generated from rinse water and chemical tanks was discharged through floor drains into the combined storm drain and sanitary sewer systems. This wastewater contained sulfuric acid, sodium chloride, a rust inhibitor, sodium dichromate, phosphoric acid, and cleaner. During the SI in 1993, 10 floor vaults, 11 sumps, and a false floor in the welding area were exposed when most of the equipment was removed from this building. The integrity of these vaults and sumps, some of which contained unknown liquids and debris when exposed, was investigated in the RI. Sierra Western Equipment, Eric Lansdown, and Christian Engineering currently occupy Building 411 for storage and a workshop.

- SA-116 consists of Building 417 (Acetylene Manifolding Facility), Building 418 (Welding Facility), and Building 424 (Oxygen Cylinder Charging Facility). Since 1983, Hydro-Chem has used SA-116 as a staging area for hazardous waste hauling activities, to steam-clean and perform light maintenance on trucks and trailers, to store equipment and products, and to temporarily store RCRA hazardous waste. Only truck exteriors are steam-cleaned in the yard. A paved area north of Building 418 is used to clean hoses; a storage shed in a vehicle repair area is used to store flammable materials; and a Hydro-Chem storage yard to the south contains drums of RCRA hazardous waste, hazardous product drums, and empty drums stored on both pallets and on asphalt pavement. The asphalt pavement in the Hydro-Chem Storage yard area was observed to be stained, cracked, and degraded, and it was noted that containers staged without secondary containment were stored in the Hydro-Chem Storage yard near storm drains.

5.8.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.8.3 Proposed Cleanup Actions

- Remedial actions for soil in two areas inside Building 411 were proposed in the draft Parcel D ROD.

5.9 IR-34: BUILDINGS 351, 351A AND 366

5.9.1 Site Description

- Building 351 was the former Electronics Shop. The facility was used for maintenance, including cleaning and painting, of electronic equipment. During operations at this facility, detergent containing small quantities of trichloroethene (TCE) was discharged through floor drains into the combined storm drain and sanitary sewer systems. During a 1988 survey of the building, abandoned paint spray booths, one electrical transformer (not containing PCBs), and chemicals were noted at Building 351. Chemicals inventoried during this survey included TCE. Past tenants occupying Building 351 have included ornament and brass products vendors, a painter/sculptor, and a valve and fitting repair operation. The valve and fitting repair operation housed two 55-gallon solvent drums and two 55-gallon oil drums within the building. Building 351 is currently vacant.

- Building 351A, the former NRDL, was used by the Navy for the repair of electronic equipment. Activities in this building included cleaning electronic equipment, which generated wastewater containing Chem-mist detergent, thinner, and solvent. Wastewater from these operations was discharged, through drains within the building, into the combined storm drain and sanitary sewer systems. Two incidents of radiation-related contamination within Building 351A have been documented, and decontamination of the building from these incidents was accomplished to the level of 200 counts per minute removable activity. The NRDL found beta-emitting contaminants in various portions of (aboveground) drain piping associated with this building. Decontamination of these drain pipes has not yet been conducted. Building 351A is currently vacant.

- In April 1996, a cesium-137 spill area located outside the southern portion of Building 351A was excavated. The excavation of asphalt and soil was conducted by Chem Nuclear. The excavation was approximately 20 by 30 feet with an average depth of 5 inches bgs. The asphalt and soil were placed in two 55-gallon drums. The excavated material was disposed of off site.

- Building 366 was the former Boat and Plastics Shop. The facility was used for boat maintenance and repair and plastics repair. Batteries were stored in an area north of this building. During operations at this facility, painting and washing wastewater containing epoxies, solvents (ketones), waste oil, and hydraulic fluid was discharged through floor drains into the combined storm drain and sanitary sewer systems. In the past, Dymax Packaging used a portion of the building for paper carton manufacturing. Building 366 is currently used by Christianson Tool Company for metals fabrication.

5.9.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.9.3 Proposed Cleanup Actions

- Remedial actions for IR-34 were not proposed in the draft Parcel D ROD.

5.10 IR-35: BUILDINGS 274, 306, AND 372, AND A PORTION OF THE AREA BOUNDED BY MANSEAU, MOREELL, AND "E" STREETS

5.10.1 Site Description

- Building 274 was the former Decontamination Training facility. Records of activities conducted in this building are unavailable. No evidence of radioactive materials or radiological use was found in Building 274. However, suspected sandblast abrasive is present outside this building. Building 274 is currently vacant.

- Building 306 is an electrical substation. During an inspection in 1990, it was noted that a leaking electrical transformer, possibly containing PCB oil, was present in this building.

- Building 372, in the northern portion of the site, was used to store prefabricated decking. Records indicate that this building was at one time used to store unknown hazardous materials. Building 372 is currently used by Astoria Metals for storage.

5.10.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.10.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-35 were proposed in the draft Parcel D ROD.

5.11 IR-37: BUILDINGS 401, 423, 435, 436, AND 437 AND USTs S-435(1) AND S-435(2)

5.11.1 Site Description

- Building 401 was used by the Navy as a Public Works shop until 1974. Specific Navy operations at the building are unknown. During a 1988 survey, minor paint spills were observed inside the building. Currently, portions of the building are used as a cabinet building shop, as a metal fabrication and sheet metal shop, for furniture storage, and as an artist's studio.

- Building 423 was used by the Navy as a compressor hut and for paint storage. It is currently vacant.

- Building 435, a wood-frame building with a concrete floor, was used by the Navy for equipment storage until 1974. A paint booth, a small workshop area, and a concrete dry vault in the floor are inside Building 435. During the 1993 SA, oil-stained asphalt and oil on exposed soil were observed east of Building 435. During Navy operations, wastewater, containing various paints and thinners, was discharged through drains in Building 435 to the combined storm drain and sanitary sewer systems. Building 435 has been leased to West Edge for the past 13 years, and is currently used to store furniture, paint, and vehicles. The east end of Building 435 is rented by a carpenter for storage.

- Building 436 was used by the Navy as a painting and paint storage facility until 1974. Wastewater containing detergent and sodium hydroxide, generated from garbage can cleaning operations, was discharged through drains in Building 436 to the combined storm drain and sanitary sewer systems. Currently, the building is used to store wood, building materials, paints, and solvents.

- Building 437 is a wood-frame and tin shed with an exposed soil floor. During the 1993 SA, stained soil was observed east of this building. Building 437 was used for pipe storage but is currently vacant.

- Two USTs, S-435(1) and S-435(2), were formerly located approximately 15 feet east of Building 435. The tanks, with a combined capacity of 1,500 gallons, were used to store solvents. During removal of the tanks in 1991, soil samples were collected from the UST excavation and analyzed for metals, VOCs, SVOCs, pesticides and PCBs, TPH-d, TPH-g, organic lead, and ethylene dibromide. Groundwater was not encountered in the excavation. Analytical results indicated that copper, lead, and zinc were present in the soil at concentrations exceeding the screening criteria. Total xylenes were detected in one soil sample at concentrations exceeding the screening criteria and TPH-g and TPH-d were detected at concentrations exceeding the screening criteria in one soil sample. SVOCs and pesticides and PCBs, were not detected in the soil samples. Following the tank removal, alternating layers of polyvinyl chloride liner and soil were used to backfill the excavation.

- EE-14 (formerly EE-10) is located between Buildings 436 and 437. Thirty-six yd^3 of contaminated soil was excavated. The main COCs were chromium, thallium, SVOCs, TPH-d, and TPH-mo. The contaminated soil was disposed of at a Class II landfill.

5.11.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.11.3 Proposed Cleanup Actions

- Remedial actions for IR-37 were not proposed in the draft Parcel D ROD.

5.12 IR-38: BUILDING 500(d) AND UST S-508

5.12.1 Site Description

- Portions of this site are in Parcels D and E (see IR-38 in Parcel E).
- Building 500 was the former CPO Barracks. During an inspection of the building, paint chips were observed in exposed soil surrounding the outside of the building. Reportedly, one electrical transformer associated with this building, was removed from an unknown location near the building and disposed of at an unknown location.
- A 750-gallon UST (S-508) was located east of the southern extension of Building 500. The tank was installed in the mid-1940s and was used to store heating oil for a boiler in Building 500. The UST was constructed of steel, and the top of the UST was approximately 3 feet bgs. Three pipes (suction, return, and vent) extended from the UST to Building 500. UST S-508 and its associated product piping were removed on July 25, 1991 during Phase I of the HPS UST program.

- During removal of UST S-508, numerous holes in the tank were observed. Soil surrounding the UST was discolored, but did not exhibit a hydrocarbon odor. The UST excavation had an average depth of 7.5 feet bgs. Two soil samples were collected at 6.5 feet bgs in the UST excavation, and one soil sample was collected at 2.5 feet bgs in the product pipe trench. The samples were analyzed for VOCs, SVOCs, pesticides and PCBs, TPH, metals, tetraethyl lead, and ethylene dibromide. None of the soil samples contained metals at concentrations exceeding the screening criteria at the time of the UST closure. The SVOCs, anthracene and fluorene, were detected in concentrations exceeding the screening criteria at the time of the UST closure, in one soil sample collected at the southern end of the excavation. TPH-d and TPH-g were detected at concentrations exceeding the screening criteria in one soil sample collected at the southern end of the excavation, and TPH-d and TPH-g were detected at concentrations exceeding the screening criteria in one soil sample collected from the product pipe trench. VOCs, pesticides, and PCBs were not detected in any of the soil samples.

- No groundwater was encountered in the excavation. Therefore, groundwater samples were not collected during the UST closure. Following removal of the tank, the excavation was lined with plastic and backfilled with the excavated soils.

- Field observations and analytical results from soil samples collected during the UST closure indicated a release of petroleum hydrocarbons to surrounding soil. Based on the concentrations of SVOCs and TPH detected in the soil samples, additional investigation was recommended to define the vertical and lateral extent of soil contamination and to evaluate potential impact of contaminants to groundwater, which was done as part of the RI.

5.12.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.12.3 Proposed Cleanup Actions

- Remedial actions for IR-38 were not proposed in the draft Parcel D ROD.

5.13 IR-39: BUILDING 505 AND SURROUNDING AREA, VACANT LOT SOUTHWEST OF BUILDING 709, AND BUILDING 519(d)

5.13.1 Site Description

- Building 505 was the former Navy Exchange which consisted of a bowling alley, gymnasium, cafeteria, and a general recreation center. During a survey conducted in 1988, a 55-gallon drum with unknown contents, three electrical transformers, and asbestos were noted in this building. The drum and transformers have been moved to an unknown location.
- Former Building 519 was the Chapel and Religious Center. It is unknown when this building was demolished.
- No activities have been identified in the vacant lot area southwest of Building 709.

5.13.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.13.3 Proposed Cleanup Actions

- Remedial actions for IR-39 were not proposed in the draft Parcel D ROD.

5.14 IR-44: BUILDINGS 408, 409, 410, AND 438 AND LARGE METAL SHED

5.14.1 Site Description

- Building 408 was used by the Navy as a furnace shelter and oven drying facility.
- Buildings 409 and 410 comprised the welder motor hut, and were used to house a welder motor generator that supplied power for the welding stations outside the buildings to the north and west.

- Building 438, the metal spray shelter, was used to house equipment to heat and then spray metal parts with a metal coating. A fume-hood structure with two metal spray shelter chambers that vented to the exterior of the building inside Building 438. These chambers were used to spray metal parts with a metal paint coating. Water from a tank reservoir located between Buildings 408 and 438 was used periodically to flush these chambers. The water drained through metal grates in the bottom of the chambers into small tanks which, in turn, appeared to drain outside, east and west of Building 438, onto stained asphalt. The spray chambers were removed prior to February 1996.

- The large, unnumbered metal shed in the eastern portion of the site was apparently used to store sandblast abrasive. In 1994, large piles of sandblast abrasive were observed inside the four buildings. However, a SI conducted in February 1996 revealed that the sandblast abrasive piles had been removed. Currently, all five buildings at the site are unoccupied.

5.14.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.14.3 Proposed Cleanup Actions

- Remedial actions for IR-44 were not proposed in the draft Parcel D ROD.

5.15 IR-45: STEAM LINES

5.15.1 Site Description

- Site IR-45 consists of the underground steam line system at HPS. The underground steam line system was constructed to deliver steam to heat buildings and berthed ships, and to warm fuel distribution lines to increase the speed of fuel flow in the lines. The system was constructed in approximately 1950 and was in use until 1984. The pipelines comprising this system are contained in box culverts referred to as "utilidors" (utility corridors). Within these utilidors, the steam line system consists of up to three types of pipes: (1) steam pipes, which carried pressurized hot steam and which are often covered with asbestos insulation; (2) condensate return lines, which collected condensate in the steam lines; and (3) pump return lines, which recirculated the collected condensate back to the main boilers. Braces elevate all three types of pipes above the floor of the utilidors.

- A section of steam line was broken during construction activities near Buildings 503 and 504 (at IR-08) in the early 1980s. This break resulted in a spill of an unknown quantity of oil that was subsequently cleaned up, and the line was repaired.

- Site IR-45 was investigated because Triple A is suspected of having used the steam line system to transport waste oil from Dry Dock 4 in Parcel C, Berth 29 in Parcel D, and Building 521 in Parcel E to an AST (S-505) in Parcel E.

5.15.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.15.3 Proposed Cleanup Actions

- Remove all steam lines and associated affected soil.

5.16 IR-48: SUSPECTED STEAM LINE

5.16.1 Site Description

- Site IR-48 is in the south-central portion of Parcel D, and consists of a suspected subsurface steam line. Prior to a SI conducted in 1993, it was suspected that this steam line ran from Berth 15, along Manseau Street to Hussey Street, then approximately 350 south on the west side of Hussey Street, then west to "H" Street, then south along "H" Street to a point between IR-38 and IR-39, where the line left Parcel D and entered Parcel E. The line was suspected of terminating in the vicinity of Building 521, the Power Plant - South Area, within Parcel E. This suspected steam line was identified as a separate site from the known steam lines within IR-45 at HPS.

- The "Draft Preliminary Assessment for the Other Areas/Utilities" report stated that a metal grate and a magnetic anomaly, indicative of a subsurface metallic structure such as a steam line, exists on the south side of Manseau Street, in the area southwest of Building 409. It is suspected that the steam lines were used to transport waste oil from docks and berths to an AST (S-505) in Parcel E. Therefore, in January 1991, an additional investigation of the metal grate and magnetic anomaly was conducted and none were found other than the drainage pipe for the baseball fields.

5.16.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.16.3 Proposed Cleanup Actions

- Remedial actions for IR-48 were not proposed in the draft Parcel D ROD.

5.17 IR-50: STORM DRAIN SYSTEM

5.17.1 Site Description

- The storm drains and sanitary sewer systems were originally constructed as a combined system, but were separated into two systems beginning in 1958.
- The HPS storm drain system consists of 10 drainage areas, A through J. Five separate storm water drainage areas are completely or partially within Parcel D, including Drainage Areas A, G, H, I, and J. In addition to the five drainage areas, eight isolated short drainage areas are in Parcel D, each with an independent outfall.
- Storm drain lines in the northern and eastern portions of Parcel D are generally located above the groundwater table. In the western and southern portions of Parcel D, closest to San Francisco Bay, storm drain lines are generally at or below the groundwater table. Areas of the storm drain system that are located below the groundwater table consist of the western branches and downgradient portions of Drainage Area A (most of the storm drain lines west of "H" Street and south of Manseau Street) and most of Drainage Area J on the Regunning Pier. Nearly all of the storm drain lines that compose Drainage Areas G, H, and I are above the groundwater table.
- The Navy conducted a nontime-critical removal action that involved removing the contaminated sediments in the storm drain system. A total of approximately 850 yd^3 of contaminated sediments were removed from 27,044 linear feet of Parcel D storm drains and were disposed of off site.

5.17.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- The draft storm drain sediment removal report was submitted to the regulatory agencies in December 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.17.3 Proposed Cleanup Actions

- Rehabilitate sections of the lines below the groundwater table.

5.18 IR-50: SANITARY SEWER SYSTEM

5.18.1 Site Description

- IR-50 consists of the facility-wide storm drain and sanitary sewer systems, which span numerous HPS sites. The HPS sanitary sewer system was originally part of the combined storm drain and sanitary sewer systems.
- The sanitary sewer system at HPS conveys facility-generated sewage to the City of San Francisco's wastewater treatment system at the Southeast Water Pollution Control Plant (SWPCP). The HPS sanitary sewer system consists of 10 major reaches of pipe (Reaches 1 through 10). Reaches 1 through 9 are separate sewer subsystems that serve discrete portions of HPS and connect to Reach 10, which serves a small portion of the facility, and acts as the main trunk line for conveying the sewage to Pump Station A in Parcel A. Sewage is discharged from Pump Station A to the City of San Francisco sanitary system at a manhole on Griffith Street. Discharged sewage is pumped to the SWPCP.
- The sanitary sewer system in Parcel D consists of six drainage reaches: 5, 6, 7, 8, 9, and 10. Each reach area of the sanitary sewer system span known IR sites or has a history of industrial discharges to the system. Parcel D receives sewage from Parcels A, B, C, and E; this sewage flows northward to Spear Avenue, then west to Pump Station A. The sewer lines generally slope downward toward the north to allow gravity flow toward Pump Station A. Groundwater potentially entering the sewer line, or porous trench backfill surrounding the sewer line, is transported off site toward the west, through the northern portion of Parcel D and to Pump Station A. Sanitary sewer lines in the northern portions of Parcel D are generally below static groundwater levels and, therefore, potentially affect groundwater

measurement. In the southern portions of Parcel D (the areas of Parcel D closest to San Francisco Bay), sanitary sewer lines are generally at or above the water table and, therefore, potentially provide groundwater recharge to the A-aquifer. An inferred boundary between sanitary sewer lines above and below the groundwater table is presented on Figure 4.22-1 of the draft final Parcel D RI report. Sanitary sewer structures, including pipe diameter and invert elevation in each reach, are also presented on Figure 4.22-1 of the draft final Parcel D RI report. Sampling locations, sewer reaches, and flow directions are shown on Figure 4.22-1A of the draft final Parcel D RI report.

5.18.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.18.3 Proposed Cleanup Actions

- Remedial actions for the sanitary sewer lines were not proposed in the draft Parcel D ROD.

5.19 IR-51: PREVIOUS TRANSFORMER SITES

5.19.1 Site Description

- Site IR-51 consists of buildings and areas throughout HPS that formerly housed electrical transformers that may have contained PCBs. In 1988, 199 transformers throughout HPS were removed from service by AEMC and NPWD. Twelve transformers within Parcel D were removed from service and disposed of. In addition, 48 transformers stored in the Building 524 yard within Parcel D were removed and disposed of. Documentation of the locations of these removed transformers is incomplete.

5.19.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.19.3 Proposed Cleanup Actions

- Remedial actions for IR-51 were not proposed in the draft Parcel D ROD. The electrical transformer storage locations were addressed as part of the individual IR sites.

5.20 IR-53: BUILDING 525 (STOREHOUSE) AND BUILDING 530 (AUTOMOTIVE HOBBY SHOP)

5.20.1 Site Description

- Site IR-53 is in the southeastern portion of Parcel D, near the southeast end of Mahan Street and Berth 22. The site covers approximately 0.5 acre and consists of Buildings 525 and 530, and the immediate areas surrounding these buildings.

- Building 525 was formerly a storehouse for containers of adhesive, joint sealing compounds, paint emulsions, and other materials, and Building 530 was used by the Navy Public Works as an automotive hobby shop. Nine electrical transformers were also stored in Building 525 prior to closure of the base in the 1977; however, the transformers were removed in 1988.

- Up to 300 gallons per day of wastewater was periodically discharged into floor drains and the combined storm drain and sanitary sewer systems from operations at Buildings 525 and 530. Dark soil staining, west of Building 525 and north of Building 530, evidence of oil leaking from winches near Building 525, and chemical spills on the floors inside both buildings were also noted.

- EE-15 (formerly EE-19) and EE-16 (formerly EE-20) are located on the northeast side of Building 530. Sixty-five yd^3 of contaminated soil was excavated from the site. The COCs were chromium, lead, SVOCs, TPH-d, and TPH-mo. The contaminated soil was disposed of at a Class II landfill.

5.20.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.20.3 Proposed Cleanup Actions

- Remedial actions for IR-53 were not proposed in the draft Parcel D ROD.

5.21 IR-55: BUILDING 307 AND SURROUNDING AREA

5.21.1 Site Description

- Building 307 was used by the Navy for electronics and electrical equipment assembly, and as a machine shop. This building was leased by Triple A. Reportedly, Triple A filled underground utility vaults, located in the vicinity of Building 307, with unknown hazardous materials, that were then paved over with asphalt. According to Navy microfiche records, no underground utility vaults exist near Building 307, but geophysical surveys only found metal plates and no vaults. In addition to the activities of Triple A, asphalt outside of Building 307 is stained, apparently due to drums that have since been removed. The concrete floor at Building 307 is stained with oil. Building 307 is currently vacant.

- EE-17 (formerly PP-1) is located on the northwest side of Building 307, between the building and IR-70. Ninety-four yd^3 of contaminated soil was excavated from the site. The COCs were arsenic, TPH-g, and TPH-mo. The contaminated soil was disposed of at a Class II landfill.

5.21.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies in February 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.21.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-55 were proposed in the draft Parcel D ROD.

5.22 IR-65: CARBON DIOXIDE REFILLING STATION

5.22.1 Site Description

- Building 324, formerly a carbon dioxide refilling station, was used to house equipment to clean and fill fire extinguishers. The building, which is divided into northern and southern portions, contains two large unidentified pieces of equipment and a work bench. An empty concrete vault (or sump) is in the southwest corner, inside the northern portion of the building; the condition of this vault has not been established. During the SA, the northern portion of the building was leased as an art studio. The northern and southern portions of the building are currently vacant.

- A small elevated tank and rack, used for cleaning and storing carbon dioxide canisters (fire extinguishers) is outside and adjacent to the south end of Building 324. During the SA, it was noted that a sign labeled "chlorine solution" was posted near the tank. Drain piping for the elevated tank, which is attached to the storage rack, runs to the west end of Building 324 and is connected to a larger pipe that discharges onto the asphalt surface at the southwest corner of the building. An electrical transformer, without a label indicating PCB testing, is also outside the southwest corner of the building; no oil staining was noted near the transformer. Navy operations at Building 324 ended in 1974.

5.22.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.22.3 Proposed Cleanup Actions

- Remedial actions for IR-65 were not proposed in the draft Parcel D ROD.

5.23 IR-66: BUILDING 407 (STOREHOUSE AND VEHICLE STORAGE YARD)

5.23.1 Site Description

- IR-66 is in the central portion of Parcel D, between Hussey and "H" Streets. The site covers approximately 2 acres, and consists of Building 407, a two-storied concrete structure with a concrete floor, and a soil- and gravel-covered yard located across the railroad tracks, north of Building 407. Building 407 was used by the Navy as a warehouse to store miscellaneous unidentified equipment, and is currently used by Allied Moving and Storage Company to store furniture. The yard was used for vehicle maintenance and storage. During the SA, minor oil staining was observed in this yard.

5.23.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.
- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.23.3 Proposed Cleanup Actions

- Remedial actions for IR-66 were not proposed in the draft Parcel D ROD.

5.24 IR-67: BUILDING 439 (SHEETMETAL SHOP) AND SURROUNDING AREA

5.24.1 Site Description

- Building 439 is a two-story concrete and metal structure with a concrete floor, constructed in 1974 as a sheet metal shop. However, the building was used by the Navy only as a warehouse. During a 1989 survey, chemicals including chlorinated solvents, PCBs, copper, naphthalene, and waste oil were identified inside Building 439. A drum containing PCBs, stored inside the building, was noted during the SA. This drum was subsequently removed, but the removal date is unknown.

- Five dip tanks, situated 4 feet bgs, and two spray painting booths are in the northwest portion of Building 439. A large, grate-covered floor sump is adjacent to the dip tanks, and a sandblasting room is south of the dip tanks. According to engineering plans, the dip tanks drain through underground piping into two waste USTs outside the west side of Building 439. During the SA, it was noted that the dip tanks, painting booths, and sump appeared to be in new condition (no staining) and to have never been used. Building 439 was used as a cardboard box manufacturing facility and as a warehouse between 1985 and 1990. The building has been vacant since 1990.

- The two waste USTs, intended to store acid and alkaline waste, are outside Building 439, opposite the dip tank room. The tanks are constructed of 1-foot-thick reinforced concrete and are lined with cast iron. The combined capacity of the two tanks is approximately 13,000 gallons. In October 1995, during sampling of the tank contents, it was noted that the acid waste tank contained approximately 5.5 feet of liquid, and the alkaline waste tank contained approximately 0.5 foot of liquid. The source of the liquid in the two tanks is unknown, but may be attributed to surface water leaking into the tanks through the tank covers or infiltration of groundwater into the tanks.

- A below-grade concrete vault is outside Building 439 opposite the paint booth room, along the west side of the building. Steam and condensate lines enter the western side of this vault. The portions of the steam and condensate lines leading into Building 439 from the vault were cut and removed on an unknown date. A floor drain is present in the bottom of the vault. According to engineering plans, a pipe leads from the vault drain to the storm drain line running beneath "H" Street. During the SA, it was noted that no sediment or standing liquid were present on the vault floor.

- Navy engineering plans indicate that a "flash tank," with a capacity of approximately 12.5 gallons, was outside of Building 439, approximately 20 feet north of the concrete vault. This tank was removed on an unknown date. Influent into the flash tank consisted of steam system condensate water from Building 439. Liquids from the flash tank discharged to a drain centered in a concrete pad beneath the flash tank. The liquids subsequently drained to the storm drain system line running beneath "H" Street.

5.24.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.24.3 Proposed Cleanup Actions

- Remedial actions for IR-67 were not proposed in the draft Parcel D ROD.

5.25 IR-68: POSEIDON AREA

5.25.1 Site Description

- Site IR-68 is on the pier at the southeastern edge of Parcel D, near Berths 17, 18, and 19. The site covers approximately 3 acres and consists of Buildings 376, 378, 379, and 382, former Building 374, various unnumbered buildings and sheds, and the areas surrounding these structures.

- Building 374, the former Poseidon Control Hut and Instrumentation Shed, was demolished, although the year of demolition is unknown. Building 376 is currently unoccupied. Building 378 is currently used as a latrine. Building 379, the former Poseidon Engineering Building, is currently used as offices by EFA West. Building 382, the Poseidon Arresting Engine Shelter, was formerly used as a fire engine shelter/garage and is currently vacant.

- A small wooden shed with a soil covered floor was formerly present northeast of Building 378, and was used to house a diesel generator. An aboveground diesel fuel tank, with a capacity of approximately 10,000 gallons, was present on the northeast side of this shed and was used to store fuel for the generator. A steel bin was reportedly used as secondary containment for this tank. An additional AST supported on a steel platform, and with an approximate capacity of 50 gallons, was present on the southeast side of the shed. This tank may have been used to store water or (other) coolant for the generator. The wooden shed, diesel generator, aboveground diesel fuel tank, and the 50-gallon tank were removed between the SA (November 1993 to January 1994) and September 1995 when drilling activities were conducted at IR-68.

- During the SA, a fuel sheen was noted on the wet, pitted asphalt and concrete pavement surrounding the aboveground diesel fuel tank. In addition, dark staining was observed on the tank platform and exposed soil inside the generator shed. In September 1995, during drilling activities at IR-68, an electrical transformer was observed between Building 378 and the generator shed. No known PCB testing has been performed on oil from this transformer. No evidence of hazardous materials was observed inside Building 379 during the SA inspection. Other buildings at IR-68 were not inspected during the SA.

5.25.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.25.3 Proposed Cleanup Actions

- Remedial actions for IR-68 were not proposed in the draft Parcel D ROD.

5.26 IR-69: BUILDING 523 PUMPHOUSE AND ADJACENT METAL SHED

5.26.1 Site Description

- Site IR-69 is in the eastern portion of Parcel D, near the southeastern end of Mahan Street, and adjacent to Berth 21. The site covers approximately 0.1 acre and consists of Building 523 and the adjacent flammable materials storage shed northeast of Building 523.

- Building 523, a saltwater pumphouse, was used by the Navy to pump saltwater to charge the fire hydrant system at HPS. The pumphouse may also have been used by Triple A to pump bilge water from ships. The system consists of a pump and associated electrical equipment. This electrical equipment, which is still present inside the building, contained oil with PCBs. An electrical transformer, which was removed, was also reportedly housed in Building 523. During the SA it was noted that the concrete floor inside Building 523 was cracked and stained, and oil stains were observed beneath the electrical switchboxes and in the location of the former electrical transformer. An area of soil with a large surface stain and an asphalt chip pile are present immediately southwest of Building 523. Navy operations at Building 523 ended in the late 1980s.

- The metal shed adjacent to and northeast of Building 523 was used by the Navy as a storage area for flammable materials. The materials stored inside the shed were not documented and are, therefore, unknown. During the SA, it was observed that the dirt floor inside the shed was stained black and one drum storage slot exhibited evidence of leakage. The shed is currently not in use.

5.26.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.26.3 Proposed Cleanup Actions

- Remedial actions for IR-69 were not proposed in the draft Parcel D ROD.

5.27 IR-70: BUILDING S-308 AND SURROUNDING AREA

5.27.1 Site Description

- Site IR-70 is in the south-central portion of Parcel D, and is bounded by Manseau Street to the north and the Regunning Pier to the east. The site covers approximately 4 acres and consists of Building S-308 and an unpaved materials accumulation area that covers most of the site. A drum and tank storage area are present within the materials accumulation area.

- Building S-308 is an empty steel-framed metal shed with a concrete floor that previously housed sandblasting operations. A cyclone separator for removing particulate material from the sandblasting equipment air stream is outside the southern wall of this building. The concrete floor within the building exhibits rust and oil stains, and suspected sandblast abrasive is present in the area surrounding the building. Building S-308 is currently vacant.

- The fenced area adjacent to and northeast of Building S-308 is partially covered with vegetation, and encompasses approximately 5,000 square feet of surface area. This area was initially investigated as part of PA-55 during the SI investigation. Materials reportedly managed or disposed of in this area include bilge liquids and sandblasting debris.

- The materials accumulation area is bounded by Building 307 (IR-55) to the southeast, and Building S-308 and the adjacent fenced area to the north. This area was initially investigated as part of PA-55 during the SI investigation. Wooden and concrete ship supports, tanks, drums, and other equipment were stored in this area. Accumulated materials currently stored in this area include oils, metals, wood, and sandblasting debris.

- The drum and tank storage area, which is within the materials accumulation area, reportedly contained a 160-gallon metal waste photochemical tank, pallets on exposed soil supporting three 55-gallon drums, a 130-gallon container filled with oil, a 5-gallon can containing organic liquid, and an iron depressurization tank. All of these materials and tanks have been removed from this area. However, no record of the removals exist. During the SI in 1994, it was noted that soil staining is present in the drum and tank storage area.

- EE-17 is located between IR-70 and Building 307 (see IR-55).

5.27.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.27.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-70 were proposed in the draft Parcel D ROD.

5.28 IR-71: CRANE DISMANTLING AND STORAGE YARD

5.28.1 Site Description

- Site IR-71 is in the east-central portion of Parcel D, near the intersection of Manseau and Cochrane Streets. The site covers approximately 1 acre, and consists of an open yard with three metal sheds. The entire ground surface at the site consists of exposed soil. Site IR-71 is currently used for storage of complete and partially dismantled cranes. The three sheds contain electrical equipment and dismantled crane motors, and crane parts and crane equipment are stored on wood pallets over exposed soil.

- Site IR-71 has been divided into two areas. The northern portion of the site, nearest Cochrane Street, comprises Area I. Fuel tanks removed from cranes were stored on wood pallets over exposed soil in this area. Fuel stored in the tanks, in addition to lubricating and waste oil from the dismantled crane equipment, reportedly leaked into the soil in Area I. Two metal sheds, used to house crane parts, are located in Area I. The southern portion of the site, nearest Manseau Street, comprises Area II. The soil is stained with oil and fuel from the aboveground tanks believed to have been stored in this area. Black- and tan-colored sand is also present in the single large shed, located in Area II. This sand is believed to be associated with sandblasting operations.

5.28.2 Current Status

- The draft final Parcel D SI report was submitted to the regulatory agencies May 30, 1994.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft final Parcel D FS report was submitted to the regulatory agencies January 24, 1997.

- The draft Parcel D ROD was submitted to the regulatory agencies November 3, 1997, and the draft final Parcel D ROD is due to be submitted May 11, 1998.

5.28.3 Proposed Cleanup Actions

- Remedial actions for IR-71 were not proposed in the draft Parcel D ROD.

6.0 PARCEL E INSTALLATION RESTORATION SITES

Parcel E will be the fifth parcel transferred to the City of San Francisco. It consists of approximately 168 acres of south shoreline and lowland coast. Parcel E is comprised of sites IR-01/21, IR-02, IR-03, IR-04, IR-05, IR-11, IR-12, IR-13, IR-14, IR-15, IR-36, IR-38, IR-39, IR-40, IR-45, IR-47, IR-50, IR-51, IR-52, IR-54, IR-56, IR-72, IR-73, IR-74, IR-75, and IR-76. Appendix F contains the enforceable schedules for the delivery of the parcel-wide RI/FS and decision documents (HLA 1994d; IT 1997a, 1997b; TtEMI 1997b, 1998).

6.1 IR-01/21: INDUSTRIAL LANDFILL AND TRIPLE A SITES 1, 6, AND 16 (IR-01) AND AREA SOUTHWEST OF BUILDING 810 (IR-21)

6.1.1 Site Description

IR-01 - Industrial Landfill and Triple A Sites 1, 6, and 16

- IR-01, Industrial Landfill, incorporates IR-21 and covers approximately 46 acres. The Artificial Fill consists of undifferentiated fill (for example, dredge materials, bedrock-derived fill, excavated Bay Mud) and industrial fill (refuse, debris, sandblast materials). High concentrations of methane gas in limited amounts were encountered in the center of the landfill, indicating the decomposition of organic materials in the refuse.

- Investigations to date indicate the presence of two aquifer zones at IR-01. The A-aquifer designates the upper aquifer zone and the B-aquifer designates the lower aquifer zone. The A-aquifer is defined as saturated fill materials that overlie Bay Mud Deposits.

- The COCs in soil at IR-01/21 are metals, SVOCs, and TPH. The COCs in groundwater at IR-01/21 are metals, VOCs, and SVOCs.

IR-21 - Area Southwest of Building 810

- IR-21, an Industrial Landfill, is within IR-01. The Artificial Fill consists of undifferentiated fill (such as, dredge materials, bedrock-derived fill, excavated Bay Mud) and industrial fill (refuse, debris, sandblast materials). This site was originally chosen as a storage area for IDW; however, upon discovery of contamination, it was included with IR-01.

- Building 810 is in IR-72 and is SA site 146.

6.1.2 Current Status

- Results of previous field work on this site were presented to the regulatory agencies in December 1992.
- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.1.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater at IR-01/21 were proposed in the draft Parcel E FS report.
- A sheetpile wall groundwater containment structure was implemented as an interim "removal" action for the Industrial Landfill. It was completed in early 1998.

6.2 IR-02: BAY FILL AREA (TRIPLE A SITES 2, 13, 14, 17, 18, AND 19 - RADIATION SITE), BURN DISPOSAL AREA, AND AST S-505

6.2.1 Site Description

Bay Fill Area

- The Bay Fill Area covers approximately 27 acres and consists of two types of Artificial Fill: (1) dredge materials, bedrock-derived fill, and excavated Bay Mud; and (2) industrial fill, overlying Bay Mud.
- Two aquifers (zones A and B) have been defined. The Bay Mud Deposits separate the A- and B-aquifers and therefore act as an aquitard between the aquifers. The Bay Mud appears to be absent in the southeastern part of IR-02, near Pier 2, resulting in a potential groundwater migration path between the two aquifers.
- Triple A Site 18 was investigated due to the presence of surface and subsurface industrial debris. Triple A Site 19 was investigated due to alleged dumping and burning of waste liquids at the site by Triple A.

- A portion of the Bay Fill Area was used for disposal of radium-containing devices. This area is in the northwest portion of IR-02 and is under investigation for radiation contamination.

- The COCs in soil at IR-02 are metals, SVOCs, PCBs, TPH, and dioxins. The COCs in groundwater at IR-02 are metals, VOCs, and PCBs.

Burn Disposal Area

- The southeast portion of IR-02 was formerly the site of a burn disposal area for domestic refuse. From 1945 to 1948, the Navy operated an open, 1-acre burn disposal area for domestic garbage and refuse-type wastes. Approximately 23,000 tons of domestic solid waste is estimated to have been disposed of and incinerated at the site during this 3-year period. Although trash was burned daily, significantly reducing the volume of solid waste in the site, some solid waste may have been disposed of at the site without burning.

- The burn disposal area was closed in 1948 because odor and smoke impacted an adjacent Navy housing complex. Upon closure in 1948, the burn disposal area was graded and covered with fill.

AST S-505

- AST S-505 is a 630,000-gallon fuel and waste oil tank. The tank has been removed.

6.2.2 Current Status

- Results of previous field work on this site were presented to the regulatory agencies in December 1992.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.2.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater at IR-02 were proposed in the draft Parcel E FS report.

6.3 IR-03: FORMER OIL RECLAMATION PONDS

6.3.1 Site Description

- Site IR-03 covers approximately 10 acres and consists of the former oil reclamation ponds situated over Artificial Fill, which overlies Bay Mud Deposits. The ponds were used as part of a waste oil reclamation system. In 1974, the ponds were emptied and filled with soil.

- Two former oil reclamation ponds were constructed in 1944 at IR-03 in Parcel E. These unlined ponds measured about 100 feet and 75 feet in diameter, respectively, and were used to store waste oil generated by ships and industrial shops for later recycling. In 1974, the former oil reclamation ponds were filled with soil without removal of underlying soil. Various investigations between 1987 and 1990 identified up to 7 feet of waste oil in monitoring wells. In 1991, approximately 70 gallons of subsurface waste oil was recovered using a peristaltic pump. The removal action at the IR-03 Waste Oil Reclamation Ponds consists of the installation of a sheetpile wall to reduce the threat of contaminant migration to the Bay. The sheetpile wall has been installed and is approximately 800 feet long with a maximum depth of 27 feet bgs. Field activities for this removal action ill be completed as soon as capping is finished in early 1998.

- To date, two aquifer zones have been defined at IR-03: the uppermost aquifer zone (A-aquifer) and the lower aquifer zone (B-aquifer). There is floating product in the A-aquifer zone. The thickness of floating product on the water table range from very thin (less than 0.01 feet) to thick (6.93 feet).

- Floating product was removed from the water table at IR-03 to reduce the volume of hazardous substances and petroleum hydrocarbons that could potentially migrate to San Francisco Bay. During the spring of 1991, a total of approximately 25 gallons of floating product on the water table was recovered from four monitoring wells on six occasions. This floating product was recovered using a peristaltic pump and was contained at the site in 55-gallon steel drums. Additional floating product was recovered every 2 weeks for 6 months during mid-1991.

- The COCs in soil at IR-03 are metals, SVOCs, PCBs, and TPH. The COCs in groundwater are metals, VOCs, SVOCs, PCBs, and TPH.

6.3.2 Current Status

- Results of the previous field work on this site were presented to the regulatory agencies in December 1992.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.3.3 Proposed Cleanup Actions

- A sheetpile wall groundwater containment structure was implemented as an interim "removal" action for the oil reclamation ponds. It was completed in early 1998.
- Remedial actions for soil and groundwater at IR-03 were proposed in the draft Parcel E FS report.

6.4 IR-04: SCRAP YARD AND BUILDING 807 (SCRAP YARD SHED), TRIPLE A SITE 3

6.4.1 Site Description

- The scrap yard is a narrow rectangular area about 5.2 acres in the west-central portion of HPS. During Triple A's occupancy, scrap metal and other debris were stored at the scrap yard.
- IR-04 includes Building 807 (Triple A Site 3), a former diesel refueling station.
- IR-04 is paved. Sandblast waste disposed of at IR-04.
- The COCs in soil at IR-04 are metals, SVOCs, and PCBs. The COCs in groundwater are metals, VOCs, and TPH.

6.4.2 Current Status

- The previous field work at this site was reported in the ASR submitted to the regulatory agencies March 12, 1993.
- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.4.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-04 were proposed in the draft Parcel E FS report.

6.5 IR-05: OLD TRANSFORMER STORAGE YARD

6.5.1 Site Description

- IR-05 is an old transformer yard south of the scrap yard, a rectangular area of approximately 4.3 acres. Sandblast waste was disposed of at this site.

- No buildings are on the site, but three distinguishable concrete pads are present in the northern portion of the site. During its occupancy, Triple A used the area as a scrap metal yard.

- The area was used to store electrical capacitors and lead and copper from submarine batteries. Handling and housekeeping practices may have resulted in releases of lead and copper residues as well as PCB oils onto the pavement at the site.

- The COCs in soil at IR-05 are metals, SVOCs, and PCBs. The COCs in groundwater are metals and SVOCs.

6.5.2 Current Status

- The previous field work at this site was reported in the ASR submitted to the regulatory agencies March 12, 1993.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.5.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-05 were proposed in the draft Parcel E FS report.

6.6 IR-11: AREA SURROUNDING BUILDING 521 (STEAM POWER PLANT - SA SITE 142)

6.6.1 Site Description

- The area surrounding Building 521 is SA site 142.
- Site IR-11 is an unpaved area of approximately 1 acre in the southeast corner of HPS.
- The Power Plant (Building 521) is the only building on the site; it operated between 1949 and 1969 to produce steam. The building is situated atop bedrock and Bay Fill deposited in the 1940s.
- Building 521 is a three-story open-bayed building containing large boilers and electrical switches, trenches for utility lines, offices, and a locker room. It is flanked by yards on the northwest and southeast sides. The northwest yard is mostly paved and contains a large steel tank, a drainage trench, a large aboveground containment vault from which a tank was removed, and a small uncurbed pad with a drum. The southeast yard is mostly unpaved and contains a building pad and an electrical switching station or transformer pad.
- The primary COCs at this site are petroleum hydrocarbons, PCBs, asbestos, and minor amounts of solvents and paint.
- This site was combined with IR-14 and IR-15 for the purposes of the RI/FS process.
- EE-18 is located on the southeast side of the steam power plant. Thirty-six yd^3 of contaminated soil was excavated from the site. The COCs were arsenic and mercury. The contaminated soil was disposed of at a Class II landfill.

6.6.2 Current Status

- PA/SI work for the site has been completed. The final SA report was completed April 15, 1994. The previous field work for this site was reported in the Group 5 ASR submitted to the regulatory agencies in September 1993.
- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- EEs were completed in early 1997. The draft EE report was submitted to the regulatory agencies February 1997.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.6.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater at IR-11 were proposed in the draft Parcel E FS report.

6.7 IR-12: BUILDING 702(d) (NATIONAL BROADCASTING COMPANY OFFICES AND STOREHOUSE), DISPOSAL TRENCH AND SALVAGE YARD, TRIPLE A SITES 3 AND 4

6.7.1 Site Description

- IR-12 is a rectangular area of about 6 acres in the west-central portion of HPS that primarily consists of the disposal trench and salvage areas.

Building 702(d) (NBC Offices and Storehouse)

- Building 702(d) has been demolished. Historically, it was used by National Broadcasting Company (NBC) for offices and storage.

Disposal Trench and Salvage Yard

- The disposal trench at the southwest end of the site was an area where Triple A disposed of oil and various chemicals.

- The eastern two-thirds of the site is referred to as the salvage yard. The salvage yard was used by both the Navy and Triple A for storage of surplus materials and scrap metal. The salvage yard is paved and enclosed with a fence.

- The COCs in soil at IR-12 are metals, SVOCs, PCBs, and TPH. The COCs in groundwater are metals, VOCs, and TPH. Sources of contaminants include oil and liquid chemicals; some drums containing oil were discovered, as well as some associated staining.

6.7.2 Current Status

- The previous field work for this site was reported in the Group 5 ASR submitted to the regulatory agencies in September 1993.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.7.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-12 were proposed in the draft Parcel E FS report.

6.8 IR-13: OLD COMMISSARY SITE BUILDINGS 524(d) AND 803(d), TRIPLE A SITES 5, 6, AND 15

6.8.1 Site Description

- IR-13, site of the old commissary, comprises approximately 0.7 acre near the southern edge of HPS. The commissary operated between 1949 and 1979.

- No buildings remain on the site; however, two building foundations exist and are used for decontamination facilities for RI activities. These buildings were 524(d), the commissary storehouse, and 803(d), the commissary.

- The site was used as a storage yard before the commissary was built in 1949.

- The COCs in soil are metals, SVOCs, PCBs, and TPH. The COCs in groundwater are metals, VOCs, and TPH. Potential sources of these contaminants are areas where drums, waste piles, and transformers were temporarily stored.

6.8.2 Current Status

- The previous field work for this site was reported in the Group 5 ASR submitted to the regulatory agencies in September 1993, which recommended no interim action.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.8.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-13 were proposed in the draft Parcel E FS report.

6.9 IR-14: OILY LIQUID WASTE DISPOSAL SITE, TRIPLE A SITES 6 AND 7, AND BUILDINGS 506(d) (RADIATION SITE), 510(d) (RADIATION SITE), 510A(d) (RADIATION SITE), 518(d) (MOVIE THEATER), AND 529(d) (RADIATION SITE)

6.9.1 Site Description

- IR-14 consists of approximately 4.5 acres near the southern edge of HPS.
- Foundations of former buildings remain from construction started in 1943, which included housing, theater, and Women's Officers' Club buildings. All buildings were removed by 1981.
- Triple A used the site for disposal of oil and other mixed wastes. Potential source areas include those areas where wastes were stored and disposed of on the surface.
- Wastes include sandblast waste and other wastes. Staining, sludge, and debris are visible throughout the site.
- The COCs in soil at IR-14 are metals, SVOCs, PCBs, TPH, and dioxins. The COCs in groundwater at IR-14 are metals and TPH.
- This site was combined with IR-11 and IR-15 for purposes of the RI/FS process.

Building 506(d) - Radiation Sites

- Building 506(d) (Radiological Research/Housing, Navy Exchange, and Resident Officer in Charge of Construction Offices) was used as a chemistry lab.
- No evidence of hazardous materials is present; however, soil sampling for chemical contamination was recommended near Buildings 506 and 507 based on possible uses inferred from the building names.

Building 510(d) and 510A (NRDL)

- Buildings 510(d) and 510A were the former sites of NRDL radiation physics operations. The site is within Parcel E at the northern end of an area bounded by "H" Street to the west, Manseau Street to the north, and Hussey Street to the east.

<u>Building 518(d) (Movie Theater)</u>

- Building 518(d), a movie theater, has been demolished.

Building 529(d) (NRDL Radioisotope Storage and Cockcroft-Walton Accelerator)

- Building 529(d) is the former site of the NRDL Radioisotope Storage and Cockcroft-Walton Accelerator. Building 529(d) is between Buildings 506(d) and 520(d).

- A stainless steel tank was removed in 1969 near Building 529(d), and the area was decontaminated. This tank was later used by the shipyard for boiler feed water storage. RASO has determined that surveys are not required.

6.9.2 Current Status

- Building 529(d) and the surrounding area has been screened for radiation contamination, and no further investigation is required.

- The previous field work for this site was reported in the Group 5 ASR submitted to the regulatory agencies in September 1993.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.9.3 Proposed Cleanup Actions

- A small area of evaluated radioactivity was detected near the location of former Building 529. This apparent buried point source will be excavated.

- Remedial actions for soil and groundwater at IR-14 were proposed in the draft Parcel E FS report.

6.10 IR-15: OILY LIQUID WASTE POND AND INCINERATION TANK (TRIPLE A SITES 12 AND 13)

6.10.1 Site Description

- IR-15 consists of two locations that comprise approximately 0.8 acre. The primary sources at IR-15 are the oily liquid waste pond and incineration tank locations. No surficial evidence of the oily liquid waste ponds or the incineration tank remains at this time. The incineration tank area was allegedly used by Triple A to burn materials; however, the types of materials burned at the site are unknown.

- One location, the oily liquid waste ponds, is within a fenced area northwest of Building 521 (IR-11). The oily liquid waste ponds area (Triple A Site 13) was a military housing area between 1946 and 1976. In 1986, Triple A used this area as a waste oil disposal site.

- The second location contained trash cans and a dumpster that held copper plates, circuit boards, x-ray film, and miscellaneous trash. The site is suspected of being used as an incinerator.

- The COCs in soil at IR-15 are metals, SVOCs, PCBs, TPH, and dioxins. The COCs in groundwater at IR-15 are metals and TPH.

- This site was combined with IR-11 and IR-14 for purposes of the RI/FS process.

6.10.2 Current Status

- The previous field work for this site was reported in the Group 5 ASR submitted to the regulatory agencies in September 1993.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.10.3 Proposed Cleanup Actions

- Remedial actions for soil and groundwater at IR-15 were proposed in the draft Parcel E FS report.

6.11 IR-36 NORTH: BUILDINGS 400, 404A, AND 405 AND THE AREA WEST OF BUILDING 405

6.11.1 Site Description

- The COCs in soil at IR-36 North are metals, hexavalent chromium, PAHs, and TPH. The COCs in groundwater at IR-36 North are VOCs and TPH.

Building 400

- Building 400 was used by the Navy as a storehouse for decommissioned ship parts and other equipment. During a 1988 survey, inventoried chemicals at this building included acetylene and oil containing PCBs. Building 400 is currently used by EFA West for storage.

Building 404A

- Building 404A is a covered parking area used to store miscellaneous parts and equipment.

Building 405

- Building 405 was used by the Navy as a supply storehouse. This building was reportedly used to store solvents, oil, gasoline, diesel fuel, formaldehyde, and chlorine. This building is currently used by a company to store equipment such as forklifts, pallets, and playground equipment.

- The vacant area west of Building 405, including the railroad tracks, was used for disposal of construction debris including cement blocks, scrap metal, and wood.

6.11.2 Current Status

- IR-36 was moved from Parcel D to Parcel E and split into three separate sites for the purposes of the RI/FS process.

- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.11.3 Proposed Cleanup Actions

- Remedial actions for IR-36 North were not proposed in the draft Parcel E FS report.

6.12 IR-36 SOUTH: BUILDINGS 406, 413, AND 414 AND VACANT LOTS

6.12.1 Site Description

- The sanitary sewer and storm drain lines run beneath "I" Street, near the western boundary of IR-36 South. Porous backfill surrounding these lines, and possibly the lines themselves, may influence the direction of groundwater flow on the western side of IR-36 South.

- The COCs in soil at IR-36 South are metals, VOCs, SVOCs, PCBs, and TPH. The COCs in groundwater at IR-36 South are metals, VOCs, and TPH.

Building 406

- Building 406 was used as a Navy supply storehouse, and contained equipment for preservation and packaging operations. The eastern portion of this building is currently used as an automobile repair garage, as well as for office space and storage by civilian tenants.

- The northwest portion of Building 406 was used by the Navy in the 1950s for preservation and packaging operations. Navy records indicate that the original concrete floor inside the building subsided significantly toward the southeast. A new concrete floor was subsequently constructed on top of the old one. These old and new floors were separated by a gravel fill layer. According to Navy records, equipment in the northwest portion of Building 406 was used to degrease parts prior to packaging them for shipping. This equipment included a degreasing machine; solvent, acid, neutralizer, water rinse, plastic dip, cold preservation dip, and hot preservation dip tanks; and miscellaneous packaging equipment. Solvents used during operations in this building included TCE. It is suspected that an unknown volume of solvent was released to soil and groundwater through floor drains and associated underground piping, and spills on the floor from Building 406. Waste oil was stored in drums outside Building 406. Several of these drums reportedly leaked oil onto the ground surface.

Building 413

- Building 413 was used by the Navy as a supply storehouse. This building is currently used as office space by the U.S. Postal Service.

- Waste oil was stored in drums in Building 413. During a 1988 survey, several damaged waste oil drums were inventoried inside this building. A large oil-stained area between Buildings 413 and 414, where waste oil was stored in drums, was also noted. No USTs or vaults have been identified at IR-36 South.

Building 414

- Building 414 has an exposed soil floor, and was used by the Navy as a Public Works facility and furniture storehouse.

6.12.2 Current Status

- IR-36 was moved from Parcel D to Parcel E and split into three separate sites for the purposes of the RI/FS process.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.12.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-36 South were proposed in the draft Parcel E FS report.

6.13 IR-36 WEST: BUILDINGS 371 AND 704 AND THE SURROUNDING AREA, AND BUILDING 709 AND SEVEN FORMER USTs ASSOCIATED WITH BUILDING 709

6.13.1 Site Description

- The COCs in soil at IR-36 West are metals, SVOCs, PCBs, and TPH. The COCs in groundwater at IR-36 West are VOCs, SVOCs, and TPH.

Buildings 371 and 704 and Surrounding Area

- Building 371 was used by the Navy as a storehouse for miscellaneous equipment. This building is currently used by Circosta Iron and Metal Company for storage of recycled metal and automotive parts.
- Building 704 was used by the Navy as an automotive repair shop. Materials used or stored at this building included motor and hydraulic oils, waste oil, diesel fuel, solvents, acids, and electrolyte solution (in batteries). Building 704 is currently used by Wagner Construction Company (Wagner) for equipment repair and storage.

- The area surrounding Buildings 371 and 704 is currently used by Wagner as a storage yard for equipment and vehicles. During investigation, it was noted that puddled surface water with a petroleum hydrocarbon-sheen and several stained soil areas were present in this storage yard. Large closed containers and underground open tanks, containing diesel fuel, waste oil, hydraulic oil, and solvent are currently stored by Wagner in this yard. The removal of these containers and tanks has not been documented by the Navy.

Building 709

- Building 709 was formerly a service station; the building has been abandoned. Five USTs (S-711 through S-715) were located adjacent to Building 709. These tanks were removed in August 1991, during Phase I of the HPS UST program. Tanks S-711 and S-712 were 5,000-gallon gasoline storage tanks; Tanks S-713 and S-714 were 5,000-gallon diesel storage tanks; and Tank S-715 was a 500-gallon waste oil storage tank. The 5,000-gallon gasoline and diesel fuel USTs (S-711 through S-714) were connected to two sets of dispenser pumps on a concrete pad approximately 25 feet east of Building 709. A remote fill pipe connected to Tanks S-711 through S-714 was south of the tanks. Tank S-715 was at the southwest corner of Building 709 and was connected to a remote fill pipe leading from the tank into Building 709.

- Two 30-gallon USTs, HPA-14 and HPA-15, were inside Building 709. These tanks were removed in June 1993, during Phase II of the HPA UST program. These tanks were used to store hydraulic fluid for the automobile lifts inside Building 709.

Tanks S-711 through S-715

- Tanks S-711 through S-715 were removed in August 1991. The surface cover over the five USTs was asphalt and concrete. Field observations recorded during removal of Tanks S-711 through S-715 indicated soil discoloration and an oil sheen on groundwater. These tanks were inspected for visible corrosion pits and holes at the time of removal; none were noted. The gasoline and diesel fuel storage tanks (S-711 through S-714) were removed from a single excavation, which had an average depth of 12 feet bgs. Sloughing of the excavation sidewalls toward the dispenser pump island threatened the stability of the dispenser pump island canopy; therefore, the portions of the underground product lines between Tanks S-711 through S-714 and the dispenser pump island were filled with grout and abandoned in place. The waste oil storage tank (S-715) was at the southwest corner of Building 709 and was removed from a 7-foot-deep excavation.

Tanks HPA-14 and HPA-15

- In June 1993, hydraulic fluid tanks (HPA-14 and HPA-15) were removed from below the service bay inside Building 709. These tanks were inspected for visible corrosion pits and holes at the time of removal; none were noted. Tank HPA-14 had a fill pipe at the surface; however, no surface opening into Tank HPA-15 was observed. The tanks had three

lift-control lines extending from the vehicle lifts to the wall of the service bay. Each of the tanks contained approximately 30 gallons of hydraulic fluid at the time of removal.

- Based on the concentrations of SVOCs, pesticides, PCBs, and TPH detected in soil and groundwater samples collected during the UST removal actions in August 1991 and June 1993, further investigation was recommended to define the lateral and vertical extent of affected soil and groundwater near Building 709. Additional soil and groundwater samples were collected in the area surrounding Building 709 and the locations of the former USTs as part of the RI field investigation.

6.13.2 Current Status

- IR-36 was moved from Parcel D to Parcel E and split into three separate sites for the purposes of the RI/FS process.
- The draft final Parcel D RI report was submitted to the regulatory agencies October 25, 1996.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.13.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-36 West were proposed in the draft Parcel E FS report.

6.14 IR-38: BUILDINGS 507(d), 508(d), 509(d), AND 517(d) (NRDL BUILDINGS - RADIATION SITES)

6.14.1 Site Description

- Site boundaries are within Parcels D (see IR-38 in Parcel D) and E.
- The COCs in soil at IR-38 are metals, SVOCs, and PCBs. The COCs in groundwater at IR-38 are metals.

Buildings 507(d), 508(d), 509(d), and 517(d) (NRDL Buildings - Radiation Sites)

- Building 507(d) is the former site of an NRDL biological laboratory. The site is within Parcel E at the northern end of an area bounded by "H" Street to the west, Manseau Street to the north, and Hussey Street to the east. No evidence of hazardous materials is present; however, soil sampling for chemical contamination was recommended near Buildings 507 based on possible uses inferred from the building names.

- Building 508(d) is the former site of the NRDL health physics office. The site is within Parcel E at the northern end of an area bounded by "H" Street to the west, Manseau Street to the north, and Hussey Street to the east.

- Building 509(d) was the animal irradiation site used by the NRDL.

- Building 517(d), the former NRDL Annex M site, is between Manseau and Mahan Streets and is bounded by "H" and Hussey Streets. The building was used by the Bio-Med division of the Navy prior to 1954.

6.14.2 Current Status

- Soil sampling for radionuclides has been completed for the area surrounding Buildings 507(d), 508(d), 509(d), and 517(d).

- IR-38 boundaries overlap with IR-14 at Buildings 506(d) and 510(d), 510A(d), 518(d), and 529(d). Field sampling has been performed as part of the RI activities at IR-14 and IR-08 in Parcel D. Analytical results were presented in the Parcel E RI report.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.14.3 Proposed Cleanup Action

- Remedial actions for a portion of this site are addressed as part of Parcel D. Remedial actions were not proposed for the Parcel E portion of this site.

6.15 IR-39: BUILDINGS 505 (NAVY EXCHANGE), 519(d) (CHAPEL AND RELIGIOUS CENTER), 707 (NRDL RESEARCH ANIMAL COLONY - RADIATION SITE), AND 708 (NRDL BIOMEDICAL FACILITY - RADIATION SITE)

6.15.1 Site Description

- IR-39 site boundaries are in Parcels D and E.

- Site IR-39 is a long, narrow northwest-to-southeast trending site, immediately south and west of site IR-36.

Building 505 (Navy Exchange)

- Building 505 was known as the Navy Exchange; it is no longer in operation. The building housed a bowling alley, gymnasium, laundromat, and kitchen. No chemicals have been reported in the building.

Building 519(d) (Chapel and Religious Center)

- Building 519(d), used as a chapel and religious center, has been demolished.

Building 707 (NRDL Research Animal Colony - Radiation Site)

- Building 707 was formerly leased to Pet Express for use as an animal clinic. No chemicals have been reported; however, five 55-gallon drums are currently stored at the northwest corner of the building. Labels on the drums indicate they contained detergent used at the clinic as disinfectant and for odor control. The drums are mostly empty and do not appear to have leaked. Several rooms in Building 707 are littered with soiled rags, paint cans, and other containers. No releases have been reported at the site. Historical data indicate that the area adjacent to Building 707, a concrete drum storage pad, was used by the NRDL for radioactive waste storage. During the Phase III radiation investigation in early 1997, hot spots were identified on and off the concrete pad adjacent to Building 707. Sampling results determined cesium-137 and radium-226 contamination. Removal of any asphalt or concrete on the pad, or the surrounding area, exhibiting elevated surface activity has been recommended for removal and the areas be rescanned.

Building 708 (NRDL Biomedical Facility - Radiation Site)

- Building 708 is the site of a former NRDL biomedical facility. The building is at the approximate intersection of "J" and "R" Streets. Historical data indicate that the area adjacent to Building 707 was used by the NRDL for radioactive waste storage. The building is a Quonset hut and is filled with refuse such as soiled rags, paint cans, and other containers.

- The site was decontaminated back to background levels after a 1962 contamination incident where a leaking drum was found.

6.15.2 Current Status

- Buildings 707 and 708 have been screened for radiation contamination, and no further investigation is required. The concrete drum storage pad next to Building 707 requires further remediation.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.15.3 Proposed Cleanup Actions

- Remedial actions for IR-39 were not proposed in the draft Parcel E FS report.

6.16 IR-40: BUILDING 527 (ELECTRICAL SUBSTATION) AND PIER 2

6.16.1 Site Description

- Building 527 is used as an electrical substation and is on Pier 2, along Berth 24.
- Three unlabeled transformers and a multiphase electric switch box in the building were observed to have leaked onto the building's foundation.
- The primary concerns at this unit are the transformers and electrical switches; however, only metals at this site have been determined to be COCs.

6.16.2 Current Status

- The field portion of the PA/SI has been completed for this site.
- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997. Site IR-40 was not recommended for further evaluation in the Parcel E FS report.
- The draft Parcel E ROD is due June 19, 1998.

6.16.3 Proposed Cleanup Action

- Remedial actions are not proposed for this site. Contaminated concrete would require proper disposal if demolition of the pier is necessary.

6.17 IR-45: STEAM LINES

6.17.1 Site Description

- The steam line system at HPS spans the entire shipyard. It provided steam to heat buildings and ships docked at the facility, and warmed oil lines to facilitate oil flow through those lines.
- The steam line system was constructed approximately 40 years ago and is no longer in use. Pipelines composing the system are often covered with lagging that contains asbestos and are typically contained within concrete trenches covered by precast concrete slabs.
- Maintenance access points, referred to as "utilidors," are located approximately every 200 to 400 feet along the system.
- Generally, the utilidors consist of 4-inch-wide steel slats placed side by side over the trench opening.
- Portions of the steam line system in Parcels C, D, and E allegedly were used by Triple A to transport waste oils potentially containing PCBs from Dry Dock 4, Building 521, and from Berth 29 to Tank S-505.
- The COCs in soil leaking from the steam lines at IR-45 are metals and PCBs.

6.17.2 Current Status

- The PA/SI field work for the site has been completed. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.17.3 Proposed Cleanup Actions

- Drain all steam lines of fluids and remove any friable asbestos along the lines facility-wide.
- Removal of any oil-contaminated lines from the concrete trenches along with any fill within those trenches is proposed. In those portions of the trenches with evidence of leakage, the concrete trench should be removed, along with any adjacent stained soil.

6.18 IR-47: FUEL DISTRIBUTION LINES AND TANK S-505

6.18.1 Site Description

- Diesel and lubrication oil lines were used to transport fluids from Berth 29 to Tank S-505 (IR-02) along the east and south shoreline of HPS. Fuel lines also extended from Tank S-505 across "J" Street to the power plant at Building 521. In addition, fuel lines ran from Tank S-505 to the oil reclamation ponds at IR-03.

- The COCs in soil leaking from fuel distribution lines at IR-47 are metals and PCBs.

6.18.2 Current Status

- The PA/SI field work for the site has been completed. Tank S-505, a 630,000-gallon AST, was removed in 1994. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft final Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.18.3 Proposed Cleanup Actions

- Drain all fuel lines of fluids remaining, remove any oil-contaminated lines, and remove any stained soil in those areas with evidence of leakage.

6.19 IR-50: STORM DRAINS AND SANITARY SEWERS

6.19.1 Site Description

- The sanitary sewer and storm drain systems at HPS were originally designed and constructed as a combined sanitary sewer and storm drain system.

- Separation of the combined system began in 1958 and was largely completed by 1976.

Sanitary Sewer System

- The overall sanitary sewer system was expanded from 1942 through 1958 and is constructed of iron, concrete, brick, and vitrified clay pipe.

- Sewage collected from throughout the system flows to Pump Station A, where it is then pumped via a force main to the west end of Crisp Avenue, where it leaves HPS and enters the San Francisco sanitary sewer system.

- Parcel E receives sewage from Parcels A, B, C, and D. Sewage from Parcel E flows northward to Spear Avenue, then west to Pump Station A. The sewer lines generally slope downward toward the north to allow gravity flow toward Pump Station A. Groundwater entering the sewer line and/or trench backfill is potentially transported off site towards the west through the northern portion of Parcel E and to Pump Station A. The southern portion of the sewer system is above static water levels and therefore potentially provides a groundwater recharge. The northern portion of the sewer system is largely below static water levels and therefore potentially acts as a groundwater "sink" or drain.

Storm Drains

- The facility storm drains discharge into the Bay at five locations.

- In general, the storm drain system is in relatively good condition. Video surveys indicated the presence of numerous small cracks and minor separations at joints throughout much of the Parcel E storm drain system. Major breaks were found to be infrequent; however, considerable sediment was present in the survey lines and occasionally blocked the camera lens. Several sections of storm drain lines with poor pipeline integrity were identified.

- Parcel E contains only one drainage area. Although the storm drain system flows by gravity, low surface elevations and tidal fluctuations inhibit efficient drainage. Tidal inflows affect pipelines throughout Parcel E because flood control gates are largely inoperative. Tidal inflow to Parcel E is most pronounced in the southern portion of the parcel, with diminishing tidal effects in the northern portion slightly above the static water level.

- The Navy conducted a nontime-critical removal action that involved the contaminated sediments in the storm drain system. A total of approximately 282 yd^3 of contaminated sediments were removed from 13,170 linear feet of Parcel E storm drains and were disposed of off site.

6.19.2 Current Status

- The PA/SI field work for the site has been completed. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft storm drain sediment removal report was submitted to the regulatory agencies in December 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.19.3 Proposed Cleanup Actions

- A removal action has been completed on the storm drain system to remove sediments from all accessible reaches.
- Portions of the storm drain system may require lining or decommissioning as part of specific site remedial actions to prevent contaminated groundwater from reaching San Francisco Bay.

6.20 IR-51: TRANSFORMER LOCATIONS

6.20.1 Site Description

- IR-51 consists of buildings or areas throughout HPS that formerly contained one or more transformers containing PCBs.
- One hundred eighteen PCB-containing transformers were removed at HPS, 48 of which were from the Building 524 yard.
- Results of a literature search, interviews, and site visits revealed no definitive evidence linking transformers stored in the Building 524 yard with any locations in Parcel E.
- The COCs at transformer locations in Parcel E are metals.

6.20.2 Current Status

- The PA/SI field work for the site has been completed. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997. Site IR-51 was not recommended for further evaluation in the Parcel E FS report.
- The draft Parcel E ROD is due June 19, 1998.

6.20.3 Proposed Cleanup Actions

- Remedial actions are not proposed for this site.

6.21 IR-52: RAILROAD RIGHT-OF-WAY (OFF SITE, WEST OF THE FACILITY)

6.21.1 Site Description

- This area is currently not in use. Historically, it was used as a railway, but the products transported are unknown.
- Several small businesses are present along this right-of-way. Dumped household items such as 5-gallon containers of paint, resins, and unidentified materials, oil and paint spills, and automotive parts were observed in several areas. The track leads to a lumber transfer yard. Pentachlorophenol (PCP) may have been used to treat the lumber as well as the railroad ties.
- The primary AOCs are the waste dumping areas and areas of soil staining. The COCs in soil at IR-52 are metals, SVOCs, and TPH.

6.21.2 Current Status

- The PA/SI work has been completed for this site. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.21.3 Proposed Cleanup Actions

- Remedial actions for IR-52 were not proposed in the draft Parcel E FS report.

6.22 IR-54: BUILDING 511A(D) (OFFICES AND WOODWORKING HOBBY SHOP)

6.22.1 Site Description

- Building 511A(d) has been demolished; only the foundation remains. Historically, it was used as a woodworking hobby shop and offices. Miscellaneous debris has been dumped on the site.
- The COCs in soil at IR-54 are metals.

6.22.2 Current Status

- The field portion of the PA/SI has been completed for this site. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.22.3 Proposed Cleanup Actions

- Remedial actions for IR-54 were not proposed in the draft Parcel E FS report.

6.23 IR-56: AREA VII (RAILROAD YARD SOUTHWEST OF CRISP AVENUE) AND RAILROAD TRACKS

6.23.1 Site Description

- Area VII is a railroad yard southwest of Crisp Avenue.
- This area currently is used as a railroad car museum and restoration area, and also for parts storage. Historically, it was used to transport lumber and for storage.
- No evidence of hazardous materials releases was observed; however, the railroad yard was historically used for lumber loading and unloading, and wood preservatives such as PCP may have been used and there is contamination at the site.
- The COCs in soil at IR-56 are metals, SVOCs, PCBs, and TPH. The COCs in groundwater at IR-56 are metals, VOCs, and TPH.

6.23.2 Current Status

- The PA/SI has been completed for this site. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.23.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-56 were proposed in the draft Parcel E FS report.

6.24 IR-72: BUILDING 810 (RCRA STOREHOUSE - SA SITE 146) AND TANKS S-801 AND S-802

6.24.1 Site Description

- The COCs in soil at IR-72 are metals, SVOCs, PCBs, and TPH. The COCs in groundwater at IR-72 are VOCs and TPH.

Building 810 (RCRA Storehouse)

- Building 810 is SA site 146. Building 810 is a one-and-one half-story wooden building (100 feet by 200 feet) with a flat roof, concrete floor, and is open to the ceiling. The building was used to temporarily store RCRA hazardous waste and IDW until it was shipped off site for disposal. East of Building 810 is an abandoned diesel fueling station (Building 811), which consists of a square wooden raised platform (25 feet by 25 feet) located adjacent to a rail line. The former UST area nearby appears to be excavated, with soil stockpiled next to the former UST locations. The station was used to fuel train engines. The primary constituents of concern are solvents, acids, and hydrocarbons.

Tanks S-801 and S-802

- USTs S-801 and S-802 were approximately 10,000-gallon steel tanks used to store gasoline. The USTs were located adjacent to Building 811 (diesel oil platform) and were installed in a side-by-side configuration. The USTs were closed in place during the Phase I UST removals and closures.

- Field observations during closure work did not indicate any contamination.

6.24.2 Current Status

- USTs were closed in place as part of Phase I work.

- The draft final summary report detailing the Phase I and II UST removals and closures in place was submitted to the Navy for review.

- PA/SI work for the site has been completed. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.24.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-72 were proposed in the draft Parcel E FS report.

6.25 IR-73: ASPHALT BATCH PLANT - SA SITE 150

6.25.1 Site Description

- The asphalt batch plant is SA site 150.
- This area is northwest of Pier 2. It is completely paved with asphalt and contains a partially burned area that once held four ASTs, a dismantled truck scale, and various debris. Two locations have heavily stained and damaged asphalt where drums were formerly stored. Three 4-inch-diameter pieces of conduit have been cut off at the ground surface. A pallet of drums and buckets containing oily liquid is present in the southeastern portion of the site. In the southern portion of the site, an open 1-gallon bucket of oily sludge is present.
- The COCs in soil at IR-73 are metals and SVOCs. The COCs in groundwater at IR-73 are TPH.

6.25.2 Current Status

- PA/SI work for the site has been completed. The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.
- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.25.3 Proposed Cleanup Actions

- Remedial actions for IR-73 were not proposed in the draft Parcel E FS report.

6.26 IR-74: BUILDING 815 (MAIN NRDL)

6.26.1 Site Description

- Building 815 was the main NRDL site. It was decontaminated to the U.S. Nuclear Regulatory Commission (NRC) standards after the Navy moved out. Radioactive waste from this building was disposed of in waste containers and removed by a licensed contractor. Liquid radioactive waste containing alpha emitters or organic solvents was properly disposed of. All laboratory drains and sinks emptied into two radioactive waste holding tanks for controlling and monitoring the release of radioactivity into the city sewage in accordance with AEC regulations. These holding tanks were surveyed at the time of decommissioning and levels were acceptable to the AEC.

- A gasoline station was located on the site of Building 815 prior to its construction. Several USTs in the building's footprint are assumed to have been removed. A soil gas survey at the site found nothing.

6.26.2 Current Status

- Building 815 has been screened for radiation contamination, and no further investigation is required. The NRC performed surveys releasing this site for unrestricted use upon termination of the license.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997. Site IR-74 was not recommended for further evaluation in the Parcel E FS report.

- The draft Parcel E ROD is due June 19, 1998.

6.26.3 Proposed Cleanup Actions

- Remedial actions are not proposed for this site.

6.27 IR-75: BUILDING 820 (CYCLOTRON - RADIATION SITE)

6.27.1 Site Description

- Building 820 housed the cyclotron and was an NRDL site. The cyclotron never achieved full power. RASO has determined that surveys are not required.

- A UST may have existed on site prior to the construction of Building 820 and may still be in place.

- The COCs in soil at IR-75 are metals. The COCs in groundwater at IR-75 are metals and TPH.

6.27.2 Current Status

- Radiation clearance is not needed for Building 820 since the cyclotron was dismantled upon decommissioning of the NRDL. No further investigation is required.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.

- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.

- The draft Parcel E ROD is due June 19, 1998.

6.27.3 Proposed Cleanup Actions

- Remedial actions for IR-75 were not proposed in the draft Parcel E FS report.

6.28 IR-76: AREA SURROUNDING BUILDINGS 830 AND 831 - RADIATION SITES

6.28.1 Site Description

- Buildings 830 and 831, former NRDL sites, were animal holding facilities.

- Radioactive carcasses from these facilities were put in plastic bags with formaldehyde and placed in 20-gallon cans for disposal in accordance with AEC regulations. RASO has determined that surveys are not required.

- The COCs in soil at IR-76 are metals, SVOCs, PCBs, and TPH.

6.28.2 Current Status

- The area surrounding Buildings 830 and 831 has been screened for radiation contamination, and no further investigation is required.

- The draft final Parcel E SI was submitted to the regulatory agencies July 22, 1994.

- The draft final Parcel E RI report was submitted to the regulatory agencies October 27, 1997.
- The draft Parcel E FS report was submitted to the regulatory agencies January 15, 1998.
- The draft Parcel E ROD is due June 19, 1998.

6.28.3 Proposed Cleanup Actions

- Remedial actions for soil at IR-76 were proposed in the draft Parcel E FS report.

7.0 PARCEL F INSTALLATION RESTORATION SITES

Parcel F is the sixth parcel that will be transferred to the City of San Francisco. Parcel F is comprised of approximately 443 acres of submerged land under San Francisco Bay. The parcel is bounded by Parcels B, C, D, and E and the property boundary in San Francisco Bay.

7.1 SITE DESCRIPTION

- An ecological risk assessment (ERA) was performed in Parcel F in two phases. Phase 1A characterized Parcel F, including the biota and the main goal of Phase 1B was to characterize contamination in offshore sediments. Offshore sediments are contaminated with metals, PAHs, pesticides and PCBs, and tributyltin.

7.2 CURRENT STATUS

- The draft Phase 1B ERA was submitted in three volumes. Volumes I and II were submitted September 30, 1996, while Volume III was submitted to the regulatory agencies November 15, 1996.
- The draft Parcel F FS report was submitted to the regulatory agencies April 3, 1998.

REFERENCES

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HLA. 1994c. "Draft Final Parcel D SI Report, Naval Station Treasure Island, HPA, San Francisco, California." May 30.

HLA. 1994d. "Draft Final Parcel E SI Report, Naval Station Treasure Island, HPA, San Francisco, California." July 22.

IT Corporation (IT). 1997a. "Draft Completion Report, Hunters Point Shipyard (HPS), Exploratory Excavations, San Francisco, California." February.

IT. 1997b. "Draft Field Summary Report, Storm Drain Sediment Removal Action, HPS, San Francisco, California." December.

PRC Environmental Management, Inc. (PRC). 1993. "Draft Final Parcel A Site Investigation Report, Naval Station, Treasure Island, HPA, San Francisco, California." October.

PRC. 1995. "Draft Final Parcel A Remedial Investigation (RI) Report, HPA, San Francisco, California." September 22.

PRC. 1996a. "Draft Finding of Suitability to Transfer for Parcel A, HPS, San Francisco, California." June 24.

PRC. 1996b. "Draft Final Parcel B RI Report, HPS, San Francisco, California." June 3.

PRC. 1996c. "Draft Final Parcel B Feasibility Study (FS) Report, HPS, San Francisco, California." September 3.

PRC. 1996d. "Draft Final Parcel D RI Report, HPS, San Francisco, California." October 25.

PRC. 1997a. "Draft Final Parcel C RI Report, HPS, San Francisco, California." March 13.

PRC. 1997b. "Draft Parcel C FS Report, HPS, San Francisco, California." February 27.

PRC. 1997c. "Draft Final Parcel D FS Report, HPS, San Francisco, California." January 24.

Tetra Tech EM Inc. (TtEMI). 1997a. "Draft Parcel D Record of Decision (ROD), HPS, San Francisco, California." November 3.

TtEMI. 1997b. "Draft Final Parcel E RI Report, HPS, San Francisco, California." October 3.

REFERENCES (Continued)

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Navy. 1997. "Final Parcel B ROD, HPS, San Francisco, California." October 7.

APPENDIX H

1997 TENANT SURVEY

(17 Pages)

APPENDIX H

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
A	101	9/23-26/97	J. Terzian	Acetone	gal.	2.0	Acetone	6.8	67-64-1	2-Propanone	U002	S	N/A	2,270	
	101	9/23-26/97	J. Terzian	Acrylic spray coating	kg	2.4	c	2.4				S	N/A		
A	101	9/23-26/97	J. Terzian	Aerosol sprays, misc.	kg	6.8	c	6.8				S	N/A		
A	101	9/23-26/97	J. Terzian	Carburetor and parts cleaner	gal.	5.0	c	17				S	N/A		
A	101	9/23-26/97	J. Terzian	Denatured alcohol	gal.	3.0	c	10.2				S	N/A		
A	101	9/23-26/97	J. Terzian	Epoxy hardeners	gal.	4.0	c	13.6				S	N/A		
A	101	9/23-26/97	J. Terzian	Epoxy resin	gal.	2.0	c	6.8				S	N/A		
A	101	9/23-26/97	J. Terzian	Epoxy sealer	gal.	0.5	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
A	101	9/23-26/97	J. Terzian	Furniture refinisher	gal.	1.0	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	Gasoline	gal.	1.0	b					S	N/A		
A	101	9/23-26/97	J. Terzian	Kerosene	gal.	7.0	b					S	N/A		
A	101	9/23-26/97	J. Terzian	Lacquer	gal.	14	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
A	101	9/23-26/97	J. Terzian	Lacquer thinner	gal.	13	c	44.2				S	N/A		
A	101	9/23-26/97	J. Terzian	Lithotine, solvent	gal.	1.0	c	3.4				S	N/A		
A	101	9/23-26/97	J. Terzian	Matte Finish	kg	1.4	Toluene	a	108-88-3	Benzene, methyl	U220	S	N/A	454	
A	101	9/23-26/97	J. Terzian	Matte Fixative	kg	7.1	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	MEK	gal.	0.5	MEK	1.7	78-93-3	2-Butanone and MEK	U159	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	Naphtha	gal.	4.0	b	13.6				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, acrylic	gal.	270	c	918				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, enamel	gal.	18	c	61				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, enamel spray	kg	6.1	c	6.1				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, oil-based	gal.	25	c	85				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, tubes of (acrylic and oil-based)	oz	8,400	c	239				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, tubes of (acrylic)	oz	200	c	5.7				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
A	101	9/23-26/97	J. Terzian	Paint, tubes of (oil-based)	oz	1,120	c	32				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint, spray cans	oz	912	c	25.8				S	N/A		
A	101	9/23-26/97	J. Terzian	Paint remover	gal.	8.0	Methylene chloride	a	75-09-2	Dichloromethane and methane, dichloro-	U080	S	N/A	454	
							Methanol	a	67-56-1	Methyl alcohol	U154			2,270	
A	101	9/23-26/97	J. Terzian	Paint thinner (mineral spirits)	gal.	76	b	258				S	N/A		
A	101	9/23-26/97	J. Terzian	Paste stripper	gal.	1.0	c	3.4				S	N/A		
A	101	9/23-26/97	J. Terzian	Photochemical solutions	gal.	28	c	95				S	N/A		
A	101	9/23-26/97	J. Terzian	Photomount spray adhesive	kg	2.8	n-Hexane	a	110-54-3	N/A	N/A	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	Propane	kg	2.4	b	2.4	74-98-6			S	N/A	d	
A	101	9/23-26/97	J. Terzian	Shellac	lb	4.0	Methanol	a	67-56-1	Methyl alcohol	U154	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	Solvents, misc.	gal.	2.0	c	6.8				S	N/A		
A	101	9/23-26/97	J. Terzian	Stains, water-based	gal.	3.0	Methanol	a	67-56-1	Methyl alcohol	U154	S	N/A	2,270	
A	101	9/23-26/97	J. Terzian	Turpenoid (highly refined petroleum distillates)	gal.	21	b	71.4				S			
A	101	9/23-26/97	J. Terzian	Turpentine	gal.	14	Turpentine	47.6	8006-64-2			S		d	
A	101	9/23-26/97	J. Terzian	Varnish	gal.	10	c	34				S			
A	101	9/23-26/97	J. Terzian	Varnish, spray	kg	1.4	c	1.4				S			
A	101	9/23-26/97	J. Terzian	Varnish stripping gel	gal.	2.0	c	6.8				S			
A	101	9/23-26/97	J. Terzian	Wax remover	gal.	3.0	c	10.2				S			
A	101	9/23-26/97	J. Terzian	WD-40	kg	0.57	c	0.57				S			
A	101	9/23-26/97	J. Terzian	Wood finish	gal.	4.0	c	13.6				S			
A	101	9/23-26/97	J. Terzian	Wood stains	gal.	15	c	51				S			
A	101	9/23-26/97	J. Terzian	Workable Fixatif	kg	5.4	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
A	101	9/23-26/97	J. Terzian	Xylene	qt	1.0	Xylene	0.85	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.5	
A	110	9/22/97	J. Terzian	Hydroquinone	kg	0.5	Hydroquinone	0.5	123-31-9	N/A	N/A	S	N/A	45.4	
A	110	9/22/97	J. Terzian	Paint, acrylic	gal.	27	c	92				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
A	110	9/22/97	J. Terzian	Paint, tubes of (acrylic and oil-based)	oz	360	c	10.2				S	N/A		
A	110	9/22/97	J. Terzian	Paint, spray cans	oz	120	c	3.4				S	N/A		
A	110	9/22/97	J. Terzian	Photochemical solutions	gal.	10	c	34				S	N/A		
A	110	9/22/97	J. Terzian	Turpenoid (highly refined petroleum distillates)	gal.	0.5	b	1.7				S	N/A		
A	808	9/17/97	Precision Transport	Propane	lb	300	b	136	74-98-6			S	N/A	d	
A	808	9/17/97	Precision Transport	Motor oil	gal.	20	b	68				S	N/A		
A	808	9/17/97	Precision Transport	Waste motor oil	gal.	20	b	68				S	N/A		
A	916	9/23/97	Dago Mary's Restaurant	Floor cleaner	gal.	3.0	c	10.2				S	N/A		
A	916	9/23/97	Dago Mary's Restaurant	Delime	gal.	4.0	Phosphoric acid	a	7664-38-2	N/A	N/A	S	N/A	2,270	
							Hydrochloric acid	a	7647-01-0	Hydrogen chloride	N/A			2,270	
A	916	9/23/97	Dago Mary's Restaurant	Bleach	gal.	4.0	Ammonium chloride	a	12125-02-9			S	N/A	2,270	
B	103	9/22/97	J. Terzian	Acetone	gal.	3.0	Acetone	51	67-64-1	2-Propanone	U002	S	N/A	2,270	
B	103	9/22/97	J. Terzian	Paint, acrylic	gal.	27	c	12				S	N/A		
B	103	9/22/97	J. Terzian	Paint, tubes of (acrylic and oil-based)	oz	360	c	10.2				S	N/A		
B	103	9/22/97	J. Terzian	Paint, tubes of (acrylic)	oz	160	c	4.5				S	N/A		
B	103	9/22/97	J. Terzian	Paint, spray cans	oz	180	c	5.0				S	N/A		
B	103	9/22/97	J. Terzian	Paint thinner (mineral spirits)	gal.	3.0	b	10.2				S	N/A		
B	103	9/22/97	J. Terzian	Powder colorant	kg	0.1	c	0.1				S	N/A		
B	103	9/22/97	J. Terzian	Turpenoid (highly refined petroleum distillates)	gal.	1.0	b	3.4				S	N/A		
B	103	9/22/97	J. Terzian	Turpentine	gal.	2.0	Turpentine	6.8	8006-64-2			S	N/A	d	
B	103	9/22/97	J. Terzian	Acetone	gal.	0.5	Acetone	51	67-64-1	2-Propanone	U002	S	N/A	2,270	
B	103	9/22/97	J. Terzian	Denatured alcohol	gal.	1.0	c	3.4				S	N/A		
B	103	9/22/97	J. Terzian	Developer solution	gal.	15	c	51				S	N/A		
B	103	9/22/97	J. Terzian	Fiber reactive dyes	oz	20	c	0.57				S	N/A		
B	103	9/22/97	J. Terzian	Fixer solution	gal.	15	c	51				S	N/A		
B	103	9/22/97	J. Terzian	Paint, acrylic	gal.	16	c	54				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
B	103	9/22/97	J. Terzian	Paint, tubes of (acrylic and oil-based)	oz	80	c	2.3				S	N/A		
B	103	9/22/97	J. Terzian	Paint, tubes of (acrylic)	oz	200	c	5.7				S	N/A		
B	103	9/22/97	J. Terzian	Paint, spray cans	oz	168	c	4.8				S	N/A		
B	103	9/22/97	J. Terzian	Paint thinner (mineral spirits)	gal.	5	b	17				S	N/A		
B	103	9/22/97	J. Terzian	Solvent (heptane-based)	gal.	1.5	c	5.1				S	N/A		
B	103	9/22/97	J. Terzian	Solvents (unmarked)	gal.	2	c	6.8				S	N/A		
B	103	9/22/97	J. Terzian	Turpenoid (highly refined petroleum distillates)	gal.	1	b	3.4				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Acetylene	ft^3	130	b	6.7				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Ammonium acetate	kg	0.15	Ammonium acetate	0.15	631-61-8	N/A	N/A	S	N/A	2,270	
B	114	9/17/97	Smith-Emery Co.	Ammonium hydroxide	L	0.4	Ammonium hydroxide	0.4	1336-21-6	N/A	N/A	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	Cupric sulfate	lb	1.0	Cupric sulfate	0.45	7758-98-7	N/A	N/A	S	N/A	4.54	
B	114	9/17/97	Smith-Emery Co.	Denatured ethyl alcohol	gal.	1.0	c	3.4				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Decal solvent	qt	1.0	c	0.85				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Degreaser	gal.	1.0	c	3.4				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Dichloromethane	gal.	1.0	Dichloromethane	3.4	75-09-2	Methane, dichloro- and methylene chloride	U080	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	Ferric chloride	lb	1.0	Ferric chloride	0.45	7705-08-0	N/A	N/A	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	Hexane	gal.	1.0	Hexane	3.4	110-54-3	N/A	N/A	S	N/A	2,270	
B	114	9/17/97	Smith-Emery Co.	Hydraulic oil	gal.	20	b	68				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Hydrochloric acid	L	0.35	Hydrochloric acid	0.35	7647-01-0	Hydrogen chloride	N/A	S	N/A	2,270	
B	114	9/17/97	Smith-Emery Co.	Hydrofluoric acid	L	0.5	Hydrofluoric acid	0.5	7664-39-3	Hydrogen fluoride	U134	S	N/A	45.4	
B	114	9/17/97	Smith-Emery Co.	Kerosene	gal.	220	b	748				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Magnaflux magnetic powder	gal.	10	c	34				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Magnaflux SKD-S2 developer	kg	2.9	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
B	114	9/17/97	Smith-Emery Co.	Nitric acid	gal.	1	Nitric acid	3.4	7697-37-2	N/A	N/A	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	Propane	gal.	1.5	b	5.1	74-98-6			S	N/A	d	
B	114	9/17/97	Smith-Emery Co.	Sodium hydroxide	gal.	0.5	Sodium hydroxide	1.7	1310-73-2	N/A	N/A	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	Spotcheck penetrant	gal.	2	c	6.8				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
B	114	9/17/97	Smith-Emery Co.	Sulfuric acid	L	0.5	Sulfuric acid	0.5	7664-93-9	N/A	N/A	S	N/A	454	
B	114	9/17/97	Smith-Emery Co.	1,1,1-TCE	gal.	1.0	1,1,1-TCE	3.4	79-01-6	Ethene, trichloro- and TCE	U228	S	N/A	45.4	
B	114	9/17/97	Smith-Emery Co.	Waste hydraulic oil	gal.	110	b	374				S	N/A		
B	114	9/17/97	Smith-Emery Co.	WD-40	gal.	2.0	c	6.8				S	N/A		
B	114	9/17/97	Smith-Emery Co.	Wood preservative	gal.	1.0	c	3.4				S	N/A		
B	115	9/19/97	Finish Works	Lacquer thinner	gal.	5.0	c	17				S	N/A		
B	115	9/19/97	Finish Works	Wood finish	gal.	2.0	c	6.8				S	N/A		
B	115	9/19/97	Finish Works	Lacquer	gal.	1.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
B	115	9/19/97	Finish Works	Sanding sealer	gal.	1.0	c	3.4				S	N/A		
B	115	9/19/97	Finish Works	Gray acrylic primer surfacer	gal.	1.0	MEK	a	78-93-3	2-Butanone and MEK	U159	S	N/A	2,270	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
							Ethyl acetate	a	141-78-6	Acetic acid, ethyl ester	U112			2,270	
B	115	9/19/97	Finish Works	Turpenoid (highly refined petroleum distillates)	gal.	1.0	b	3.4				S	N/A		
B	115	9/19/97	Finish Works	Gray acrylic primer surfacer	gal.	1.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
B	116	9/10/97	Frame Works	Paints and varnishes	gal.	17	c	57.8				S	N/A		
B	116	9/10/97	Frame Works	Spray paint	oz	600	c	17				S	N/A		
B	116	9/10/97	Frame Works	Solvents (miscellaneous)	gal.	5.0	c	17				S	N/A		
B	116	9/10/97	Frame Works	Butane	lb	10	b	4.5				S	N/A		
B	116	9/10/97	Frame Works	Turpentine	gal.	2.0	Turpentine	6.8	8006-64-2			S	N/A	d	
B	116	9/10/97	Frame Works	Nitric acid	qt	1.0	Nitric acid	0.8	7697-37-2	N/A	N/A	S	N/A	454	
B	116	9/10/97	Frame Works	Chloroform	oz	16	Chloroform	0.4	67-66-3	Methane, trichloro-	U044	S	N/A	4.54	
B	116	9/10/97	Frame Works	Ethyl acetate	gal.	5.0	Ethyl acetate	17	141-78-6	Acetic acid, ethyl ester	U112	S	N/A	2,270	
B	117	9/22-23/97	J. Terzian	Colorants	L	40	c	40				S	N/A		
B	117	9/22-23/97	J. Terzian	Denatured alcohol	gal.	0.25	c	0.85				S	N/A		
B	117	9/22-23/97	J. Terzian	Epoxy sealer	gal.	0.5	c	1.7				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
B	117	9/22-23/97	J. Terzian	Etching ink	gal.	0.5	c	1.7				S	N/A		
B	117	9/22-23/97	J. Terzian	Kerosene	gal.	1.0	b	3.4				S	N/A		
B	117	9/22-23/97	J. Terzian	Lacquer thinner	gal.	1.0	c	3.4				S	N/A		
B	117	9/22-23/97	J. Terzian	Paint, acrylic	gal.	5.0	c	17				S	N/A		
B	117	9/22-23/97	J. Terzian	Paint, oil-based	gal.	10	c	34				S	N/A		
B	117	9/22-23/97	J. Terzian	Paint, tubes of (acrylic and oil-based)	oz	480	c	13.6				S	N/A		
B	117	9/22-23/97	J. Terzian	Paint, spray cans	oz	180	c	5.1				S	N/A		
B	117	9/22-23/97	J. Terzian	Paint thinner (mineral spirits)	gal.	7.0	b	23.8				S	N/A		
B	117	9/22-23/97	J. Terzian	Penetrating sealer	gal.	1.0	c	3.4				S	N/A		
B	117	9/22-23/97	J. Terzian	Solvents (assorted)	gal.	10	c	34				S	N/A		
B	117	9/22-23/97	J. Terzian	Turpentine	gal.	7.0	Turpentine	23.8	8006-64-2			S	N/A	d	
B	117	9/22-23/97	J. Terzian	Workable Fixatif	kg	1.0	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
B	117	9/22-23/97	J. Terzian	Xtender	gal.	8.0	c	27.2				S	N/A		
B	120	9/25/97	Police Athletic Club	Oil-based paints and varnishes	gal.	4.0	c	13.6				S	N/A		
B	120	9/25/97	Police Athletic Club	Descaler (corrosive)	gal.	5.0	c	17				S	N/A		
B	120	9/25/97	Police Athletic Club	Chlorine releasing tablets	lb	30	c	13.6				S	N/A		
B	120	9/25/97	Police Athletic Club	Bromide releasing tablets	lb	4.0	c	1.8				S	N/A		
B	120	9/25/97	Police Athletic Club	Propane	gal.	50	b	170	74-98-6			S	N/A	d	
B	125	9/23/97	Bridenthal Cabinetry	Paint thinner (mineral spirits)	gal.	3.0	b	10.2				S	N/A		
B	125	9/23/97	Bridenthal Cabinetry	Turpenoid (highly refined petroleum distillates)	gal.	2.0	b	6.8				S	N/A		
B	125	9/23/97	Bridenthal Cabinetry	Acrylic paints	gal.	2.0	c	6.8				S	N/A		
B	125	9/23/97	Bridenthal Cabinetry	Oil-based paint	oz	200	c	5.7				S	N/A		
B	125	9/23/97	Bridenthal Cabinetry	Propane	lb	150	b	68	74-98-6			S	N/A	d	
B	128	9/19/97	CCSF DEA	ZEP Flash floor cleaner	gal.	5.0	c	17				S	N/A		
C	DD4	9/15/97	Astoria Metals	Propane	gal.	2300	b	7,840	74-98-6			S	N/A	d	
C	DD4	9/15/97	Astoria Metals	Asbestos	lb	30,000	**Asbestos**	**13,636**	1332-21-4	N/A	N/A	S	N/A	0.454	Yes
C	DD4	9/15/97	Astoria Metals	Diesel		Unknown	b					R	Adsorbants used and soil removed		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
C	DD4	9/15/97	Astoria Metals	Roofing cement	gal.	20	c	68				S	N/A		
C	DD4	9/15/97	Astoria Metals	Motor oil	gal.	10	b	34				S	N/A		
C	DD4	9/15/97	Astoria Metals	Petroleum grease	gal.	15	b	50				S	N/A		
C	134	9/22/97	Odaco, Inc.	Freon (1,1,1,2-Tetrafluoroethane)	ft^3	300	c	15.4				S	N/A		
C	134	9/22/97	Odaco, Inc.	Acetylene	ft^3	130	b	6.7				S	N/A		
C	134	9/22/97	Odaco, Inc.	Refrigerant gas	ft^3	65	c	3.3				S	N/A		
C	134	9/22/97	Odaco, Inc.	Brite Dip (corrosive)	gal.	5.0	c	17				S	N/A		
C	134	9/22/97	Odaco, Inc.	Ammoniated hand cleaner	gal.	3.0	c	10.2				S	N/A		
C	134	9/22/97	Odaco, Inc.	Various household cleaners	gal.	8.0	c	27.2				S	N/A		
C	134	9/22/97	Odaco, Inc.	Motor oil	gal.	2.0	b	6.8				S	N/A		
C	134	9/22/97	Odaco, Inc.	Spray paint	oz	360	c	10.2				S	N/A		
C	134	9/22/97	Odaco, Inc.	Cutting oil	gal.	1.0	b	3.4				S	N/A		
C	134	9/22/97	Odaco, Inc.	Paint thinner (mineral spirits)	gal.	1.0	b	3.4				S	N/A		
C	134	9/22/97	Odaco, Inc.	Concrete waterproofing sealant	gal.	1.0	c	3.4				S	N/A		
C	134	9/22/97	Odaco, Inc.	Alkylbenzene	gal.	6.0	c	20.4				S	N/A		
C	134	9/22/97	Odaco, Inc.	Polyol ester, lubricants	gal.	3.0	c	10.2				S	N/A		
C	134	9/22/97	Odaco, Inc.	Hydraulic fluid	gal.	5.0	b	17				S	N/A		
C	134	9/22/97	Odaco, Inc.	Spent refrigerant	gal.	55	c	187				S	N/A		
C	134	9/22/97	Odaco, Inc.	Vacuum pump oil	gal.	25	b	85				S	N/A		
C	134	9/22/97	Odaco, Inc.	Ports cleaning solvent	gal.	55	c	187				S	N/A		
C	134	9/22/97	Odaco, Inc.	Waste oil	gal.	55	b	187				S	N/A		
C	211	9/26/97	DOT, Maritime Administration	Gasoline	gal.	15	b	51				S	N/A		
C	230	10/7/97	Ermico Enterprises	n-Methylpyrolidone	gal.	25	c	85				S	N/A		
C	230	10/7/97	Ermico Enterprises	M800 Stoner urethane mold release	gal.	60	b	204				S	N/A		
C	230	10/7/97	Ermico Enterprises	32 Tellus Oil	gal.	5.0	b	17				S	N/A		
C	230	10/7/97	Ermico Enterprises	68 Tellus Oil	gal.	5.0	b	17				S	N/A		
C	230	10/7/97	Ermico Enterprises	Devcon 5-min Epoxy	oz	180	c	5.1				S	N/A		
C	230	10/7/97	Ermico Enterprises	K-4 Catalyst	gal.	15	Phosphoric acid	a	7664-38-2	N/A	N/A	S	N/A	2,270	

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
C	230	10/7/97	Ermico Enterprises	Waste oil	gal.	55	b	187				S	N/A		
C	275	10/7/97	Ermico Enterprises	Waste cutting oil	gal.	20	b	68				S	N/A		
C	275	10/7/97	Ermico Enterprises	Burnish No. 30	lb	600	Sodium phosphate	a	7758-29-4	N/A	N/A	S	N/A	2,270	
							Dodecylbenzene sulfonate	a	25155-30-0	N/A	N/A			454	
C	275	10/7/97	Ermico Enterprises	Poly fast-cut	lb	250	Dodecylbenzene sulfonate	a	25155-30-0	N/A	N/A	S	N/A	454	
C	275	10/7/97	Ermico Enterprises	Propane	gal.	840	b	2,856	74-98-6			S	N/A	d	
C	275	10/15/97	Ermico Enterprises	Santrol 35	gal.	55	c	187				S	N/A		
C	301	9/15/97	Astoria Metals	Motor oil, SAE 30	gal.	110	b	374				S	N/A		
C	301	9/15/97	Astoria Metals	Hydraulic oil	gal.	110	b	374				S	N/A		
C	301	9/15/97	Astoria Metals	Antifreeze	gal.	165	Ethylene glycol	a	107-21-1	N/A	N/A	S	N/A	2,270	
C	301	9/15/97	Astoria Metals	Epoxy resin	gal.	10	c	34	25068-38-6			S	N/A		
C	367	9/15/97	Astoria Metals	Propane	gal.	250	b	1,250	74-98-6			S	N/A	d	
C	372	9/15/97	Astoria Metals	Diesel and mineral oils (mixture)	gal.	825	b	2,805				S	N/A		
C	372	9/15/97	Astoria Metals	Floatcoat	gal.	825	b	2,805				S	N/A		
C	372	9/15/97	Astoria Metals	Lead	lb	35,000	**Lead**	**15,910**	7439-92-1	N/A	N/A	S	N/A	4.54	Yes
D	302	9/12/97	Golden Gate Railroad Museum	Hydraulic oil	gal.	55	b	187				S	N/A		
D	302	9/12/97	Golden Gate Railroad Museum	Corrosion inhibitor	gal.	110	c	374				S	N/A		
D	302	9/12/97	Golden Gate Railroad Museum	Safety-Kleen	gal.	60	b	204				S	N/A		
D	302	9/12/97	Golden Gate Railroad Museum	32 Tellus Oil, cutting oil	gal.	20	b	68				S	N/A		
D	302	9/12/97	Golden Gate Railroad Museum	Acetylene	ft^3	65	b	3.3				S	N/A		
D	323	10/14/97	J. Terzian	Acetylene	ft^3	402	b	20.4				S	N/A		
D	323	10/14/97	J. Terzian	Paint, oil-based	gal.	9.0	c	30.6				S	N/A		
D	323	10/14/97	J. Terzian	Paint, spray cans	oz	144	c	4.1				S	N/A		
D	323	10/14/97	J. Terzian	Paint thinner (mineral spirits)	gal.	2.0	b	6.8				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	323	10/14/97	J. Terzian	Propane	lb	175	b	80	74-98-6			S	N/A	d	
D	323	10/14/97	J. Terzian	Solvents (assorted)	gal.	4.0	c	13.6				S	N/A		
D	363	9/22/97	Quality Craftsman	Acetylene	ft^3	65	b	3.3				S	N/A		
D	363	9/22/97	Quality Craftsman	Lacquer	gal.	30	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	363	9/22/97	Quality Craftsman	Paint thinner (mineral spirits)	gal.	10	b	34				S	N/A		
D	364	9/11/97	Young Laboratories	Acetone	gal.	1.0	Acetone	3.4	67-64-1	2-Propanone	U002	S	N/A	2,270	
D	364	9/11/97	Young Laboratories	Ammonium hydroxide	gal.	2.0	Ammonium hydroxide	6.8	1336-21-6	N/A	N/A	S	N/A	454	
D	364	9/11/97	Young Laboratories	Denatured alcohol	gal.	1.0	c	3.4				S	N/A		
D	364	9/11/97	Young Laboratories	Ether	qt	1.0	c	0.85				S	N/A		
D	364	9/11/97	Young Laboratories	Hydrochloric acid	gal.	8.0	Hydrochloric acid	27.2	7647-01-0	Hydrogen chloride	N/A	S	N/A	2,270	
D	364	9/11/97	Young Laboratories	Hydrofluoric acid	gal.	0.5	Hydrofluoric acid	1.7	7664-39-3	Hydrogen fluoride	U134	S	N/A	45.4	
D	364	9/11/97	Young Laboratories	Lead	lb	10.5	Lead	4.8	7439-92-1	N/A	N/A	S	N/A	4.54	
D	364	9/11/97	Young Laboratories	Nitric acid	gal.	8.0	Nitric acid	27.2	7697-37-2	N/A	N/A	S	N/A	454	
D	364	9/11/97	Young Laboratories	Paints	gal.	2.0	c	6.8				S	N/A		
D	364	9/11/97	Young Laboratories	Potassium cyanide	kg	0.1	Potassium cyanide	0.1	151-50-8	Potassium cyanide K (CN)	P098	S	N/A	4.54	
D	364	9/11/97	Young Laboratories	Sulfuric acid	gal.	1.0	Sulfuric acid	3.4	7664-93-9	N/A	N/A	S	N/A	454	
D	364	9/11/97	Young Laboratories	Waste hydrochloric acid	gal.	5.0	Hydrochloric acid	17	7647-01-0	Hydrogen chloride	N/A	S	N/A	2,270	
D	364	9/11/97	Young Laboratories	Waste nitric acid	gal.	3.0	Nitric acid	10.2	7697-37-2	N/A	N/A	S	N/A	454	
D	364	9/11/97	Young Laboratories	Waste sulfuric acid	gal.	0.33	Sulfuric acid	1.1	7664-93-9	N/A	N/A	S	N/A	454	
D	366	9/24/97	Christian Engineering	Waste motor oil	gal.	55	b	187				S	N/A		
D	366	9/24/97	Christian Engineering	Waste hydraulic oil	gal.	55	b	187				S	N/A		
D	366	9/24/97	Christian Engineering	Hydraulic oil	gal.	55	b	187				S	N/A		
D	366	9/24/97	Christian Engineering	Heat transfer fluid	gal.	5.0	c	17				S	N/A		
D	366	9/24/97	Christian Engineering	Dromus Oil B	gal.	5.0	c	17				S	N/A		
D	366	9/24/97	Christian Engineering	Safety-Kleen	gal.	15	b	51				S	N/A		
D	366	9/24/97	Christian Engineering	Solvent degreaser	gal.	2.5	1,1,1-TCA	a	71-55-6	Ethane; 1,1,1-TCE; and methyl chloroform	U226	S	N/A	454	

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	366	9/24/97	Christian Engineering	Valvata J680, forklift oil	gal.	5.0	b	17				S	N/A		
D	366	9/24/97	Christian Engineering	Mobile Gear 627, machining oil	gal.	5.0	b	17				S	N/A		
D	366	9/24/97	Christian Engineering	Unax AW32 oil	gal.	5.0	b	17				S	N/A		
D	366	9/24/97	Christian Engineering	Lubriplate	gal.	6.0	c	19				S	N/A		
D	366	9/24/97	Christian Engineering	Xylene (xylol)	gal.	5.0	Xylene	17	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
D	366	9/24/97	Christian Engineering	Antifreeze	gal.	3.0	Ethylene glycol	a	107-21-1			S	N/A	2,270	
D	366	9/24/97	Christian Engineering	Naphtha	gal.	1.0	b	3.4				S	N/A		
D	366	9/24/97	Christian Engineering	Acetone	gal.	1.0	Acetone	3.4	67-64-1	2-Propanone	U002	S	N/A	2,270	
D	366	9/24/97	Christian Engineering	Enamel paint	gal.	10	c	34				S	N/A		
D	366	9/24/97	Christian Engineering	Primer	gal.	3.0	c	10				S	N/A		
D	366	9/24/97	Christian Engineering	Polyamide epoxy system	gal.	1.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
D	366	9/24/97	Christian Engineering	Developer	oz	144	1,1,1-TCA	a	71-55-6	Ethane; 1,1,1-TCE; and methyl chloroform	U226	S	N/A	454	
D	366	9/26-10/14/97	J. Terzian	Acetylene	ft^3	399	b	20.5				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Antifreeze	gal.	1.0	Ethylene glycol	a	107-21-1	N/A	N/A	S	N/A	2,270	
D	366	9/26-10/14/97	J. Terzian	Brake fluid	gal.	2.0	b	6.8				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Compressor fluid	gal.	65	b	221				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Denatured alcohol	gal.	1.0	c	3.4				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Lacquer	gal.	14	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	366	9/26-10/14/97	J. Terzian	Lacquer sealer	gal.	1.0	c	3.4				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Lacquer thinner	gal.	7.0	c	23.8				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Matte finish	oz	36	Toluene	a	108-88-3	Benzene, methyl	U220	S	N/A	454	
D	366	9/26-10/14/97	J. Terzian	Paint, oil-based	gal.	5.0	c	17				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Paint, tubes of (oil-based)	oz	120	c	0.34				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	366	9/26-10/14/97	J. Terzian	Paint, spray cans	oz	192	c	5.5				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Paint thinner (mineral spirits)	gal.	3.0	b and c	10.2				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Paint remover	gal.	1.0	Methylene chloride	a	75-09-2	Dichloromethane and methane, dichloro-	U080	S	N/A	454	
							Methanol	a	67-56-1	Methyl alcohol	U154			2,270	
D	366	9/26-10/14/97	J. Terzian	Primers	gal.	1.0	c	3.4				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Turpenoid (highly refined petroleum distillates)	gal.	3.0	b	10.2				S	N/A		
D	366	9/26-10/14/97	J. Terzian	Turpentine	gal.	0.5	Turpentine	1.7	8006-64-2			S	N/A	d	
D	366	9/26-10/14/97	J. Terzian	Varnish	gal.	1.0	c	3.4				S	N/A		
D	401	10/8/97	DiPaolo and Barber	Paint, acrylic	gal.	15	c	51				S	N/A		
D	401	10/8/97	DiPaolo and Barber	Paint, oil-based	gal.	3.0	c	10.2				S	N/A		
D	401	10/8/97	DiPaolo and Barber	Paint thinner (mineral spirits)	gal.	2.0	b	6.8				S	N/A		
D	401	10/8/97	DiPaolo and Barber	Turpenoid (highly refined petroleum distillates)	gal.	1.0	b	3.4				S	N/A		
D	401	10/8/97	DiPaolo and Barber	Turpentine	gal.	1.0		3.4	8006-64-2			S	N/A	d	
D	401	10/3/97	James Heagy	Printing ink	gal.	1.0	c	3.4				S	N/A		
D	401	10/3/97	James Heagy	Oil-based paint	gal.	2.0	c	6.8				S	N/A		
D	401	10/3/97	James Heagy	Ammonia	gal.	15	Ammonia	51	7664-41-7	N/A	N/A	S	N/A	45.4	
D	401	10/3/97	James Heagy	Hydrochloric acid	gal.	1.0	Hydrochloric acid	3.4	7647-01-0	Hydrogen chloride	N/A	S	N/A	2,270	
D	401	10/3/97	James Heagy	Nitric acid	gal.	2.0	Nitric acid	6.8	7697-37-2	N/A	N/A	S	N/A	454	
D	401	10/3/97	James Heagy	Duplicating fluid	gal.	15	Methanol	a	67-56-1	Methyl alcohol	U154	S	N/A	2,270	
D	401	10/3/97	James Heagy	Isopropyl alcohol	gal.	2.0		6.8				S	N/A		
D	401	10/3/97	James Heagy	Xylene	gal.	0.5	Xylene	1.7	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
D	401	10/3/97	James Heagy	MEK	gal.	1.5	MEK	5.1	78-93-3	2-Butanone and MEK	U159	S	N/A	2,270	
D	401	10/3/97	James Heagy	Insulating oil	gal.	5.0	b	17				S	N/A		
D	401	10/3/97	James Heagy	Belt dressing spray	oz	48	c	1.4				S	N/A		
D	401	10/3/97	James Heagy	Gear lubricating oil	gal.	3.0	b	10.2				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	401	10/3/97	James Heagy	Formula 116 rubber rejuvenator	gal.	6.0	1,1,1-TCA	a	71-55-6	Ethane, 1,1,1-trichloro- and methyl chloroform	U226	S	N/A	454	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
							Methyl isobutyl ketone	a	108-10-1	Hexone and 4-methyl-2-pentanone	U161			2,270	
D	401	10/3/97	James Heagy	Blanket Rejuvenator	gal.	5.0	Methylene chloride	a	75-09-2	Dichloromethane and methane, dichloro-	U080	S	N/A	454	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
							Methanol	a	67-56-1	Methyl alcohol	U154			2,270	
D	401	10/3/97	James Heagy	Propane	lb	50	Propane	22.7	74-98-6			S		d	
D	401	10/3/97	James Heagy	Waste Transformer oil	gal.	300	b and c	1,020				S			
D	401	10/3/97	James Heagy	Acetylene	ft^3	65	b	3.3				S			
D	401	10/3/97	James Heagy	Shell Diala Oil AX	gal.	5.0	b	17				S			
D	401	10/3/97	James Heagy	Acrylic enamel reducer	gal.	3.0	Acetone	a	67-64-1	2-Propanone	U002	S	N/A	2,270	
							Ethylene glycol	a	107-21-1	N/A	N/A			2,270	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	401	9/19/97	Patricia Powers	Spray paint	oz	360	c	10.2				S	N/A		
D	401	9/19/97	Patricia Powers	Paint thinner (mineral spirits)	gal.	2.0	b	6.8				S	N/A		
D	401	9/19/97	Patricia Powers	Oil-based paint	oz	80	c	2.3				S	N/A		
D	401	10/29/97	West Edge Design	Etching primer	gal.	20	Phosphoric acid	a	7664-38-2	N/A	N/A	S	N/A	2,270	
D	401	10/29/97	West Edge Design	Etching solution	gal.	10	Selenium oxide	a	7446-08-4	Selenium dioxide	U204	S	N/A	4.54	
D	401	10/29/97	West Edge Design	Galvanizing fluid	oz	84	c	2.4				S	N/A		
D	401	10/29/97	West Edge Design	Kerosene	gal.	5.0	b	17				S	N/A		
D	401	10/29/97	West Edge Design	Lacquer	gal.	20	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	401	10/29/97	West Edge Design	Lacquer thinner	gal.	20	c	68				S	N/A		
D	401	10/29/97	West Edge Design	MEK	gal.	2.0	MEK	5.1	78-93-3	2-Butanone and MEK	U159	S	N/A	2,270	
D	401	10/29/97	West Edge Design	Paint and epoxy remover	gal.	3.0	c	10.2				S	N/A		
D	401	10/29/97	West Edge Design	Propane	gal.	30	b	102	74-98-6			S	N/A	d	

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	402	9/19/97	Vacant	Hydraulic oil	gal.	200	b	680				S	N/A		
D	404	9/10/97	Mina Metals	Duct Seal	kg	1,026	Hexane	a	110-54-3	N/A	N/A	S	N/A	2,270	
D	404	9/10/97	Mina Metals	Eco Spray Adhesive	kg	342	Hexane	a	110-54-3	N/A	N/A	S	N/A	2,270	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	404	9/10/97	Mina Metals	MEI Mono-Tack Spray Adhesive	kg	133	Dibutyl phthalate	a	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester., n-butyl-phthalate, and di-n-butyl phthalate	U069	S	N/A	4.54	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	404	9/10/97	Mina Metals	Motor oil	kg	209	b	209				S	N/A		
D	404	9/10/97	Mina Metals	Shell Dromus B, water soluble oil	kg	209	b	209				S	N/A		
D	404	9/10/97	Mina Metals	MEI Duct Sealant	kg	209	c	209				S	N/A		
D	404	9/10/97	Mina Metals	Propane	kg	137	Propane	137	74-98-6			S	N/A	d	
D	404	9/10/97	Mina Metals	Acetylene	kg	38	b and c	38				S	N/A		
D	404	9/10/97	Mina Metals	Harvey's thread cutting oil	kg	7.6	b and c	7.6				S	N/A		
D	404	9/10/97	Mina Metals	Paint thinner (mineral spirits)	kg	3.8	b and c	3.8				S	N/A		
D	404	9/10/97	Mina Metals	Paint epoxy remover	kg	3.8	c	3.8				S	N/A		
D	404	9/10/97	Mina Metals	Enamel paint	kg	15	c	15				S	N/A		
D	404	9/10/97	Mina Metals	Spray Galv, weld-through primer	kg	3.6	c	3.6				S	N/A		
D	404	9/10/97	Mina Metals	Metal Etch	kg	3.8	Phosphoric acid	a	7664-38-2	N/A	N/A	S	N/A	2,270	
							Nitric acid	a	7697-37-2	N/A	N/A			454	
D	404	9/10/97	Mina Metals	Acetone	kg	3.8	Acetone	3.8	67-64-1	2-Propanone	U002	S	N/A	2,270	
D	404	9/10/97	Mina Metals	Rustoleum	kg	3.8	c	3.8				S	N/A		
D	404	9/10/97	Mina Metals	Turpentine	kg	0.5	Turpentine	0.5	8006-64-2			S	N/A	d	
D	404	9/10/97	Mina Metals	Gasoline	kg	19	b	19				S	N/A		
D	404	9/10/97	Mina Metals	Pensol, Naptha solvent	kg	19	c	19				S	N/A		
D	404	9/10/97	Mina Metals	Grease	kg	7.5	b	7.5				S	N/A		
D	407	9/11/97	American Van Lines	Propane	lb	75	b	34	74-98-6			S	N/A	d	
D	411	9/24/97	Eric Lansdown - The Dollhouse	Epoxy paint converter	gal.	4.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	411	9/24/97	Eric Lansdown - The Dollhouse	Industrial finish reducer	gal.	1.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
D	411	9/24/97	Eric Lansdown - The Dollhouse	Paint thinner (mineral spirits)	gal.	5.0	b	17				S	N/A		
D	411	9/24/97	Eric Lansdown - The Dollhouse	Xylene	gal.	1.0	Xylene	3.4	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
D	411	9/24/97	Eric Lansdown - The Dollhouse	Lacquer	gal.	1.0	Xylene	a	1330-20-7	Benzene, dimethyl-, xylene (mixed), and xylene (isomers & mixture)	U239	S	N/A	45.4	
							Toluene	a	108-88-3	Benzene, methyl	U220			454	
D	411	9/24/97	Eric Lansdown - The Dollhouse	Lacquer thinner	gal.	1.0	c	3.4				S	N/A		
D	411	9/24/97	Eric Lansdown - The Dollhouse	Enamel paint	gal.	5.0	c	17				S	N/A		
D	411	9/24/97	Eric Lansdown - The Dollhouse	Motor oil	gal.	2.0	b	6.8				S	N/A		
D	411	9/24/97	Eric Lansdown - The Dollhouse	Lubricants	oz	36	c	1.0				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Paints and paint thinners	gal.	15	c	51				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Spray paint	oz	360	c	10.2				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Hydraulic oil	gal.	10	b	34				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Waste hydraulic oil	gal.	55	b	187				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Waste motor oil	gal.	55	b	187				S	N/A		
D	411	9/23/97	Sierra Western Equipment	Diesel	gal.	500	b	1,700				S	N/A		
D	418	9/17/97	Hydro-Chem Services	Acetylene	ft^3	100	b	5.1				S	N/A		
D	418	9/17/97	Hydro-Chem Services	Lubricating oil	gal.	10	b	34				S	N/A		
D	418	9/17/97	Hydro-Chem Services	Gasoline	gal.	5.0	b	17				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
D	418	9/17/97	Hydro-Chem Services	Diesel	gal.	10	b	34				S	N/A		
D	418	9/17/97	Hydro-Chem Services	Waste oil	gal.	25	b	85				S	N/A		
D	418	9/17/97	Hydro-Chem Services	Oil-based paint	gal.	3.0	c	10.2				S	N/A		
D	435	10/14/97	J. Terzian	Paint, oil-based	gal.	1.0	c	3.4				S	N/A		
D	435	10/14/97	J. Terzian	Paint thinner (mineral spirits)	gal.	1.0	b	3.4				S	N/A		
D	435	10/29/97	West Edge Design	Acetylene	ft^3	200	b	10.2				S	N/A		
D	435	10/29/97	West Edge Design	Epoxy acrylics	gal.	20	b	68				S	N/A		
D	435	10/29/97	West Edge Design	Hydroflame (propane)	ft^3	125	b	6.4	74-98-6			S	N/A	d	
D	435	10/29/97	West Edge Design	Thinners (paint and lacquer)	gal.	10	c	34				S	N/A		
D	606	10/20/97	SFRA (Police)	Waste motor oil	gal.	110	b	374				S	N/A		
D	606	10/20/97	SFRA (Police)	Motor oil	gal.	55	b	187				S	N/A		
D	606	10/20/97	SFRA (Police)	Antifreeze	gal.	4.0	Ethylene glycol	a	107-21-1			S	N/A	2,270	
D	606	10/20/97	SFRA (Police)	Firearm cleaning solvent	L	2.0	c	2.0				S	N/A		
D	606	10/20/97	SFRA (Police)	Acetylene	ft^3	100	b	5.1				S	N/A		
E	371	10/10/97	S&W Production	Waste oil	gal.	25	b	85				S	N/A		
E	371	10/10/97	S&W Production	Motor oil	gal.	3.0	b	10.2				S	N/A		
E	371	10/10/97	S&W Production	Reactive reducer	gal.	1.0	c	3.4				S	N/A		
E	371	10/10/97	S&W Production	Paint	gal.	2.0	c	6.8				S	N/A		
E	371	10/10/97	S&W Production	Coatings	gal.	3.0	c	10.2				S	N/A		
E	371	10/10/97	S&W Production	Bondo, dent repair	gal.	1.0	c	3.4				S	N/A		
E	371	10/10/97	S&W Production	Oil	gal.	Unknown	b	Unknown				R	Unknown (small release from 55-gallon drum, tenant was not owner)		
E	405	9/12/97	Clean Comp	Propane	lb	25	b	11.4	74-98-6			S	N/A	d	
E	405	9/12/97	Clean Comp	Paint	gal.	4.0	c	13.6				S	N/A		
E	405	9/12/97	Clean Comp	Hydraulic oil	gal.	2.5	b	8.5				S	N/A		
E	405	9/12/97	Clean Comp	Diesel	gal.	12	b	40.8				S	N/A		
E	406	9/12/97	B&A Bodywork/Towing	Waste oil	gal.	16	b	54				S	N/A		
E	406	9/12/97	B&A Bodywork/Towing	Motor oil	gal.	55	b	187				S	N/A		
E	406	9/12/97	B&A Bodywork/Towing	Gear lube	gal.	48	b	163				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
E	406	9/12/97	B&A Bodywork/Towing	Acetylene	ft^3	65	b					S	N/A		
E	406	9/12/97	B&A Bodywork/Towing	Lacquer thinner	oz	192	Ethyl acetate	a	141-78-6	Acetic acid, ethyl ester	U112	S	N/A	2,270	
E	406	9/12/97	B&A Bodywork/Towing	Wheel bearing grease	lb	16	b	7.3				S	N/A		
E	406	9/12/97	B&A Bodywork/Towing	Brake cleaner	oz	144	1,1,1-TCA	a	71-55-6	Ethane; 1,1,1-TCE; and methyl chloroform		S	N/A	454	
E	406	9/12/97	B&A Bodywork/Towing	Paint	gal.	20	c	68				S	N/A		
E	413	9/11/97	American Van Lines	Propane	lb	75	b	34	74-98-6			S	N/A	d	
E	704	10/20/97	Wagner Construction	Antifreeze	gal.	3.0	Ethylene glycol	a	107-21-1	N/A	N/A	S	N/A	2,270	
E	704	10/20/97	Wagner Construction	Battery cleaner	kg	3.2	c	3.2				S	N/A		
E	704	10/20/97	Wagner Construction	Curing compounds	gal.	10	c	34				S	N/A		
E	704	10/20/97	Wagner Construction	Diesel	gal.	50	b	170				S	N/A		
E	704	10/20/97	Wagner Construction	Gear oil	gal.	10	b	34				S	N/A		
E	704	10/20/97	Wagner Construction	Grease	gal.	15	b	51				S	N/A		
E	704	10/20/97	Wagner Construction	Hydraulic oil	gal.	3.0	b	10.2				S	N/A		
E	704	10/20/97	Wagner Construction	Motor oil	gal.	75	b	255				S	N/A		
E	704	10/20/97	Wagner Construction	Paint thinner (mineral spirits)	gal.	1.0	b	3.4				S	N/A		
E	704	10/20/97	Wagner Construction	Safety-Kleen	gal.	10	b	34				S	N/A		
E	704	10/20/97	Wagner Construction	Starting fluid	kg	1.8	c	1.8				S	N/A		
E	704	10/20/97	Wagner Construction	Waste oil	gal.	220	b	748				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Acetylene	ft^3	195	b	10				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Kerosene	gal.	5.0	b	17				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Safety-Kleen	gal.	60	b	204				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Heating oil	gal.	4000	b	13,600				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Oil-based paint	gal.	15	c	51				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Adhesive sealant	gal.	2.0	c	6.8				S	N/A		

APPENDIX H (Continued)

NOTICE OF STORED/RELEASED/DISPOSED HAZARDOUS MATERIALS
ENVIRONMENTAL BASELINE SURVEY, HUNTERS POINT SHIPYARD

Parcel	Bldg.	Date Surveyed	Tenant	Item	Units	Estimated Quantity	Substance(s)	Quantity (kg)	CAS No(s).	Regulatory Synonym	RCRA Waste No.	Stored Released Disposed	Action Taken	RQ (kg)	Greater than RQ or 1,000 kg[e]
E	809	9/12/97	Golden Gate Railroad Museum	Antifreeze	gal.	3.0	Ethylene glycol	a	107-21-1	N/A	N/A	S	N/A	2,270	
E	809	9/12/97	Golden Gate Railroad Museum	Hydraulic fluid (fire resistant)	gal.	5.0	Ethylene glycol	a	107-21-1	N/A	N/A	S	N/A	2,270	
E	809	9/12/97	Golden Gate Railroad Museum	Fuel, diesel	gal.	25	b	85				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Fuel, gasoline	gal.	30	b	102				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Starting fluid	gal.	4.0	Ethyl ether	a	60-29-7	Ethane,1,1'-oxybis-	U117	S	N/A	45.4	
E	809	9/12/97	Golden Gate Railroad Museum	Grease (various)	gal.	164	b	558				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Oil (various)	gal.	839	b	2,853				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Stoddard solvent	gal.	110	b	374				S	N/A		
E	809	9/12/97	Golden Gate Railroad Museum	Solvent, penetrating oil	gal.	15	b	51				S	N/A		

Notes:
Bolded hazardous substances identify RCRA hazardous materials over the RQ or 1,000 kg (40 Code of Federal Regulations [CFR] Section 302.4).

CCSF	City and County of San Francisco	kg	Kilogram	N/A	Not applicable	RCRA	Resource Conservation and Recovery Act	TCA	Trichloroethane
D	Disposed	L	Liter	oz	Ounce	RQ	Reportable quantity	TCE	Trichloroethene
ft^3	Cubic feet	lb	Pound	qt	Quart	S	Stored		
gal.	Gallon	MEK	Methyl ethyl ketone	R	Released	SFRA	San Francisco Redevelopment Agency		

a Item contains an unknown percentage of the listed hazardous substance.
b Petroleum product
c Sufficient information was unavailable at the time of the survey to determine if the item is a hazardous substance.
d Propane and turpentine are listed in the National Institute of Occupational Safety and Health *Pocket Guide to Hazardous Materials*, but are not listed in 40 CFR 302.4.
e Applies to RCRA-regulated substances only (40 CFR Section 302.4).

VOLUME 2

HPS BASEWIDE EBS DATABASE

The basewide environmental baseline survey (EBS) Revision 01 report summarizes environmental information from Hunters Point Shipyard (HPS), San Francisco, California, and was compiled by Tetra Tech EM Inc., formerly PRC Environmental Management, Inc. (PRC), for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command, Engineering Field Activity West (EFA West). This document is based on existing environmental information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products at HPS. This information was gathered from the 1995 visual site inspection (VSI), 1997 tenant survey, Installation Restoration Program (IRP) reports, and other environmental reports.

EFA West recognizes that a basewide EBS is a tool for the integration of environmental cleanup, compliance, and reuse programs. An important feature of the HPS basewide EBS is the concurrent preparation of a relational database that stores environmental information previously gathered by a variety of Navy environmental consultants, and information on the current site conditions gathered during the EBS process. This database will be updated periodically, as new information becomes available or site conditions change. It is expected that the HPS database will be a useful resource to those involved with the IRP, the Navy's compliance and real estate managers, and reuse specialists.

The main purpose of the basewide EBS database is compilation of building-specific information and supporting data used for the purpose of categorization according to U.S. Department of Defense (DoD) guidelines. This EBS database may be linked with the HPS chemical and geologic database constructed and maintained for the purpose of preparing the parcel-based remedial investigation reports. Optimally, a geographical information system application can be written to extract building-specific information and chemical/geologic data to aid in the preparation of site-specific EBS (SSEBS) and finding of suitability to lease documentation and reports. Another application would be the preparation of maps containing spatial distribution of contaminants to support SSEBS documents.

This basewide EBS report is organized into two volumes. Volume I contains an introduction and descriptions of the survey methodology, past and current operations, and the environmental setting. It also details the EBS findings for base property and adjacent property, and present the conclusions, including the environmental condition of property (ECP) classifications (DoD categories). Volume II contains the printed database, including the rationale and supporting information for the property

classifications. The information in the database has been organized into individual reports based on the geographic boundaries of the reuse subparcels defined by the City of San Francisco, which is designated to be the eventual owner of the property. Figure 1 shows the 60 subparcel units as specified by the City and County of San Francisco Planning Department (CCSFPD).

Under the IRP, HPS was divided into five contiguous geographic "parcels" in 1992, A through E, which followed the proposed cleanup sequence. Of the 60 reuse subparcels, 16 straddle these IRP parcel boundaries. Separate subparcel database reports containing building and environmental information on a parcel basis were generated for 10 of the 16 units. The other six subparcels straddled small areas of one parcel, but were principally in another. The subparcel data were separated by parcel because transfer of property is proposed on that basis. In general, subparcel units will be used as a planning tool. Table 1 provides a cross reference for the reuse subparcels, the IRP parcels, and the associated buildings, as well as other structures. This table also includes the underground storage tank (UST) sites and numerous sites that are contaminated (IR sites) or that required an inspection (site inspection sites).

Two additional subparcel reports were created to include data for facility areas not assigned to specific reuse subparcels. These areas include the submerged tidal and intertidal lands of HPS (Parcel F), and the formerly used defense sites.

EBS SUBPARCEL REPORTS

The EBS subparcel reports are in alpha-numeric order (same order as they appear in Table 7-1 in Chapter 7, Volume I). The tabs are color coded by parcel as follows:

Parcel	Tab Color
A	Yellow
B	Red
C	White
D	Green
E	Blue
F and Other (FUDS)	Orange

The EBS subparcel reports all have a standard format that includes a page heading and environmental information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products at HPS. The heading appears on each page of the report and lists the subparcel number, the ECP

category classification, and provides a general description of the building and other significant structures within the subparcel.

The page heading is followed by 22 tables that constitute the main body of the subparcel reports. The tables organize information either by the subparcel as a whole or by individual building. Buildings that cross subparcel boundaries have been assigned to only one of the subparcels (typically the one containing the larger portion of the building). Demolished building data have also been included when known; demolished buildings are denoted with a "d" in parentheses. Buildings that have been renumbered are listed with the old number in parentheses. If a building is not listed for a particular table, information for that building is unavailable or unknown. If no data appear in a column or cell for a building or site, the information is unavailable or unknown. The 22 tables are discussed below in the order in which they appear in the subparcel reports.

Land Use. The land-use table includes the building numbers, the past uses of the buildings, the current tenants, and the current uses (San Francisco Redevelopment Agency 1997). The future land use as specified by the CCSFPD in July 1997 is also listed.

Physical Details. The building physical detail table summarizes previously presented data including the year of construction and the interior square-footage (Tetra Tech, Inc. [Tetra Tech] 1994). The table also lists the construction materials, number of stories, structural condition, and general housekeeping as observed during the 1995 VSI.

Roadways. This table presents roadways that parallel or intersect the subparcel and are listed along with approximate orientation.

General Subparcel Information. This table lists all adjacent reuse subparcels and notes which IRP parcels comprise the subparcel.

Utilities. Data on the physical condition of and contamination in the sanitary sewer, storm sewer, and steam systems were extracted from previous studies (Harding Lawson Associates [HLA] 1994b, 1994c, 1994d, 1994e; PRC 1993a). For reference, the sanitary sewer system has been divided into 10 drainages numbered "1" to "10." The storm sewer system includes 10 drainages identified as "A" to "J" and several smaller reaches that collect runoff from small areas and discharge directly into the Bay. The table describes the relation of these systems to the subparcel and identifies the contaminants associated with the particular section of sewer line or steam system. Contaminants are listed by type (metals, volatile organic

compounds, semivolatile organic compounds, polychlorinated biphenyls [PCB], or total petroleum hydrocarbons) and are only included if concentrations in excess of the health-based levels were detected. These studies were performed before preliminary remediation goals were used for HPS. Data on the fuel line system were also included in this section when relevant.

Topography/Geology/Soil/Water/Biology. The topography, geology, and elevation data have been estimated from a map that included both topographic and geologic data (HLA 1994c), while the soil types were taken from a different map (Tetra Tech 1994). Subparcel areas were estimated from the electronic file used to generate the HPS subparcel map (see Figure 1). Groundwater data were derived from several sources, including the draft facility-wide groundwater monitoring plan (PRC 1995g). Habitat data were derived from previously presented data (PRC 1995a).

Cultural/Historic Resources. Any building or other structure of cultural or historic significance is included in this table.

Building Environmental Data Summary. The building environmental data summary table lists all of the buildings or former buildings associated with the subparcel and indicates which of asbestos, radon, air monitoring, lead, hazardous materials, PCBs, radiological, 1997 tenant survey, tanks (USTs and aboveground storage tanks [AST]), 1995 VSI, or hazardous waste environmental data tables that follow are relevant for a specific building. These same data have been sorted by building number and are presented in Table 2.

IRP Sites. The IRP sites that intercept even a small part of the subparcel are listed in this table along with any associated buildings and the site name. Substances originally investigated as part of the site are listed as suspected substances.

Potentially PCB-Contaminated Equipment. The potentially PCB-contaminated equipment table lists data collected during the 1995 VSI. Transformers or other electrical equipment thought to potentially contain PCBs have been included, even when labels or other markings may indicate that no PCBs are present. Any observed warning signs or other markings have been noted in the table. The two subtables, "Existing and Former High Voltage Electrical Equipment" and "Existing Low Voltage Electrical Equipment," inventory transformers that are part of the PCB environmental compliance program at HPS (Navy Public Works Center [PWC] 1996). Please note, Table 5-4A in Volume I contains more updated information than the subparcel reports on high voltage transformers.

Hazardous Material Storage Sites (1942-1995). Data regarding the past storage of hazardous materials at Navy buildings were gathered from a variety of data sources (PRC 1995a, Tetra Tech 1994). The 1995 VSI observations were summarized under the present use section of the table. The data are principally information concerning Navy activities, but Buildings 104, 113, 120, 336, 371, 404A, and 406 were leased by the Navy to tenants in 1995. Therefore, current storage information for these buildings refers to the tenant's activities and not the Navy's.

Hazardous Waste Storage Sites (1942-1995). Data regarding the past generation or storage of hazardous waste were gathered from a variety of data sources (PRC 1995a, Tetra Tech 1994). Some of the data for the past use of hazardous substances did not clearly identify whether the substance was a product or waste. The VSI observations were summarized under the present use section of the table. The data are principally information concerning Navy activities, but Buildings 104, 113, 120, 336, 371, 404A, and 406 were leased by the Navy to tenants in 1995. Therefore, current storage information for these buildings refers to the tenant's activities and not the Navy's.

1997 Tenant Survey. The 1997 tenant survey lists the hazardous materials stored, released, or disposed of within the last year by tenants leasing buildings from the Navy. The table lists the item considered; the hazardous material; hazardous material type; status, if the hazardous is being stored, released, or disposed of; and the quantity of the material. The table also identified if hazardous material in its pure form is present at the Comprehensive Environmental Response, Compensation, and Liability Act reportable quantity or 1,000 kilograms, whichever is smaller (40 Code of Federal Regulations Section 373).

1995 VSI. The 1995 VSI section lists the observations noted inside the buildings and in the immediate vicinity outside. Any observations regarding areas not obviously associated with a building were included under the additional comments section. The observations are current up to 1995.

Radiation. Only buildings that were historically used for radiation experiments by the former U.S. Naval Radiological Defense Laboratory have been included in this section. Inclusion on this list does not imply that surveys are required or that a contamination problem exists.

ASTs. Data in the AST table are based in part on previous data (PRC 1995a), 1995 VSI, and current AST work performed at HPS (IT 1997b). Please note, Table 5-6 in Volume I contains more updated information than the subparcel reports on ASTs.

USTs. Based on previous data (PRC 1995a), all known UST sites have been included in this table.

Asbestos. Asbestos data included in this table were derived from 1995 VSI and asbestos survey and remediation reports (Tetra Tech 1993b; MINS 1994a; PWC 1997; Environmental Chemical Corporation 1995). Please note, Table 5-3 in Volume I contains more updated information than the subparcel reports on asbestos.

Lead. No surveys of lead-based paint have been conducted at HPS, except in Parcel A.

Radon. No surveys of radon gas indoor air quality have been conducted at HPS.

Air Monitoring. Indoor ambient air quality surveys have been performed in buildings at Parcels B, C, and D.

Rationale for Assigning ECP Category. The rationale section discusses the past use or ongoing presence of hazardous substances, their potential release to the environment, and the status of investigations or remedial actions that may be required.